

Baskar
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(FILE 'HCAPLUS' ENTERED AT 10:59:24 ON 06 SEP 2002)

L1 1383 SEA FILE=HCAPLUS ABB=ON PLU=ON (MORAXELL? OR B OR M OR
BRANHAMMELL?) (W) CATARRH?
L2 66 SEA FILE=HCAPLUS ABB=ON PLU=ON L1(10A) ANTIGEN
L3 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L2(10A) (VACCIN? OR
IMMUNIS? OR IMMUNIZ? OR ADJUVANT)
L4 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L3(10A) (POLYPROTEIN OR
POLYPEPTIDE OR PEPTIDE OR PROTEIN)

-key terms

L4 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:255245 HCAPLUS
DOCUMENT NUMBER: 134:265146
TITLE: Cloning and characterization of outer membrane
protein OMP106 gene of Moraxella catarrhalis and
its prophylactic, diagnostic and therapeutic
uses
INVENTOR(S): Tucker, Kenneth; Plosila, Laura; Tillman, Ulrich
F.
PATENT ASSIGNEE(S): Antex Biologics Inc., USA
SOURCE: U.S., 49 pp., Cont.-in-part of U.S. Ser. No.
642,712.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|----------|
| US 6214981 | B1 | 20010410 | US 1997-968685 | 19971112 |
| CN 1223549 | A | 19990721 | CN 1997-195990 | 19970428 |
| ZA 9703809 | A | 19971201 | ZA 1997-3809 | 19970502 |
| KR 2000010734 | A | 20000225 | KR 1998-708845 | 19981103 |

PRIORITY APPLN. INFO.: US 1996-642712 A2 19960503
AB The invention discloses the Moraxella catarrhalis outer membrane
protein-106 (OMP106) polypeptide, polypeptides derived therefrom
(OMP106-derived polypeptides), nucleotide sequences encoding these
polypeptides, and antibodies that specifically bind the OMP106
polypeptide and/or OMP106-derived polypeptides. Also disclosed are
immunogenic, prophylactic or therapeutic compns., including
vaccines, comprising OMP106 polypeptide and/or OMP106-derived
polypeptides. The invention addnl. discloses methods of inducing
immune responses to M. catarrhalis and M. catarrhalis OMP106
polypeptides and OMP106-derived polypeptides in animals.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L4 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:78537 HCAPLUS
DOCUMENT NUMBER: 134:144470
TITLE: A high molecular weight major outer membrane
protein of Moraxella and the gene encoding it
and the diagnosis, prophylaxis and treatment of
infection
INVENTOR(S): Loosmore, Sheena M.; Sasaki, Ken; Yang,
Yan-Ping; Klein, Michel H.
PATENT ASSIGNEE(S): Connaught Laboratories Limited, Can.

Searcher : Shears 308-4994

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SOURCE: PCT Int. Appl., 247 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|-------------|
| WO 2001007619 | A1 | 20010201 | WO 2000-CA870 | 20000726 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| EP 1203082 | A1 | 20020508 | EP 2000-951136 | 20000726 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL | | | |
| PRIORITY APPLN. INFO.: | | | US 1999-361619 | A2 19990727 |
| | | | WO 2000-CA870 | W 20000726 |

AB An isolated and purified outer membrane protein of a Moraxella strain, particularly M. catarrhalis, having a mol. mass of about 200 kDa, is provided by recombinant means. The about 200 kDa outer membrane protein as well as nucleic acid mols. encoding the same are useful in diagnostic applications and immunogenic compns., particularly for in vivo administration to a host to confer protection against disease caused by a bacterial pathogen that produces the about 200 kDa outer membrane protein or produces a protein capable of inducing antibodies in a host specifically reactive with the about 200 kDa outer membrane protein. N-terminally and C-terminally truncated about 200 kDa proteins also are produced recombinantly. The gene was cloned from the 4223 strain by screening an expression library in .lambda.EMBL3 with antiserum to the protein. A series of overlapping fragments were obtained and assembled to give the full-length gene. The gene was then used as a probe to obtain the gene from a no. of different strains of the bacterium. Protein manufd. in Escherichia coli was obtained as inclusion bodies that could be resolubilized and used raise antiserum in mice and guinea pigs. The antiserum was bactericidal and could block the binding of the bacterium to animal cells. Comparison of the sequences of the G tract of genes from strains with different clumping activity indicated that the no. of G's in the tract affected levels of gene expression. Prepn. and characterization of N- and C-terminal truncation derivs. is described.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:628168 HCAPLUS
DOCUMENT NUMBER: 133:221588
TITLE: Immunogenic compounds

Searcher : Shears 308-4994

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INVENTOR(S): Ruelle, Jean-louis
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|--|----------|-----------------|----------|
| WO 2000052042 | A1 | 20000908 | WO 2000-EP1468 | 20000223 |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| EP 1163265 | A1 | 20011219 | EP 2000-907603 | 20000223 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: GB 1999-4559 A 19990226
WO 2000-EP1468 W 20000223

AB The invention provides BASB081 polypeptides from Moraxella catarrhalis and polynucleotides encoding BASB081 polypeptides and methods for producing such polypeptides by recombinant techniques. Also provided are diagnostic, prophylactic and therapeutic uses.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:227773 HCAPLUS

DOCUMENT NUMBER: 132:250005

TITLE: Antigenic outer membrane protein OMP21 of Moraxella catarrhalis and the gene encoding it and their prophylactic, diagnostic and therapeutic uses

INVENTOR(S): Tucker, Kenneth; Tillmann, Ulrich F.

PATENT ASSIGNEE(S): Antex Biologics Inc., USA

SOURCE: PCT Int. Appl., 109 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|---|----------|-----------------|----------|
| WO 2000018910 | A1 | 20000406 | WO 1999-US22918 | 19991001 |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, | | | |

Searcher : Shears 308-4994

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AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 9964100 A1 20000417 AU 1999-64100 19991001
EP 1117779 A1 20010725 EP 1999-951716 19991001
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO
JP 2002525110 T2 20020813 JP 2000-572357 19991001
PRIORITY APPLN. INFO.: US 1998-164714 A 19981001
WO 1999-US22918 W 19991001

AB The invention discloses the *Moraxella catarrhalis* outer membrane protein polypeptide and polypeptides derived therefrom (collectively "OMP21"), nucleotide sequences encoding said OMP21, and antibodies that specifically bind OMP21. Also disclosed are pharmaceutical compns. including prophylactic or therapeutic compns., which may be immunogenic compns. including vaccines, comprising OMP21, antibodies thereto or nucleotides encoding same. The invention addnl. discloses methods of inducing an immune response to *M. catarrhalis* and OMP21 in an animal, preferably a human, methods of treating and methods of diagnosing *Moraxella* infections in an animal, preferably a human, and kits therefor. The outer membrane proteins of several strains of *M. catarrhalis* were extd. with non-denaturing detergents (octyl glucoside or EmpigenBB.RTM.) and fractionated on SDS-polyacrylamide gels followed by transfer to PVDF membranes for N-terminal sequencing. The protein was antigenic in rabbits and conserved between strains of *M. catarrhalis* and related bacteria. Antisera to the protein mediated complement killing of *M. catarrhalis*. The gene, *omp21*, was cloned by PCR with degenerate primers and a knockout mutation created. The knockout strain showed weaker binding to cultured nasopharyngeal cells than did the wild type.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:191223 HCAPLUS

DOCUMENT NUMBER: 132:233331

TITLE: *Moraxella catarrhalis* basb034 polypeptides and utility in vaccine development and diagnosis

INVENTOR(S): Ruelle, Jean-louis

PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 106 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|---|----------|-----------------|----------|
| WO 2000015802 | A1 | 20000323 | WO 1999-EP6781 | 19990914 |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, | | | |

Searcher : Shears 308-4994

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ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 AU 9958632 A1 20000403 AU 1999-58632 19990914
 BR 9914492 A 20010626 BR 1999-14492 19990914
 EP 1114160 A1 20010711 EP 1999-946171 19990914
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
 PT, IE, SI, LT, LV, FI, RO
 JP 2002525057 T2 20020813 JP 2000-570329 19990914
 NO 2001001263 A 20010430 NO 2001-1263 20010313
 PRIORITY APPLN. INFO.: GB 1998-20002 A 19980914
 WO 1999-EP6781 W 19990914

AB The invention provides BASB034 polypeptides and polynucleotides encoding BASB034 polypeptides and methods for producing such polypeptides by recombinant techniques. It is not uncommon to isolate Moraxella catarrhalis strains that are resistant to some or all of the std. antibiotics. The gene BASB034 was isolate from Moraxella catarrhalis strain ATCC43617 and other strains. The non-coding flanking regions of the BASB034 gene were analyzed and exploited for modulation of BASB034 gene expression. Rflp patterns within this gene were found with the following restriction endonucleases: HphI, AluI, RsaI, EcoRV, and Sau3A1. A vaccine is described comprising the gene BASB034 protein and at least one other Moraxella catarrhalis antigen. This may be used to generate an immune response. Antibodies specific for this antigen are discussed in the light of Moraxella catarrhalis infection detection and treatment and diagnosis. Also provided are diagnostic, prophylactic and therapeutic uses.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:795970 HCAPLUS

DOCUMENT NUMBER: 132:20305

TITLE: Protein BASB021 and its encoding polynucleotides from Moraxella catarrhalis strains and use for diagnosis of and vaccine against otitis media

INVENTOR(S): Thonnard, Joelle

PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 88 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| WO 9964602 | A2 | 19991216 | WO 1999-EP3824 | 19990531 |
| WO 9964602 | A3 | 20000203 | | |

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU,
 CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
 IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
 MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG,
 SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW,
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

Searcher : Shears 308-4994

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RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 9945050 A1 19991230 AU 1999-45050 19990531
EP 1086229 A2 20010328 EP 1999-927846 19990531
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, FI

PRIORITY APPLN. INFO.: GB 1998-12440 A 19980609
WO 1999-EP3824 W 19990531

AB Claimed are BASB021 polypeptides and polynucleotides encoding
BASB021 polypeptides from *Moraxella catarrhalis* (also known as
Branhamella catarrhalis) strains, methods for producing such
polypeptides by recombinant techniques, and methods for their use in
diagnostics for detecting infection by certain pathogens,
specifically otitis media, and as vaccines against bacterial
infection.

L4 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:736939 HCAPLUS

DOCUMENT NUMBER: 131:348195

TITLE: Protein BASB020 and its encoding polynucleotides
from *Moraxella catarrhalis* strains and use for
diagnosis of and vaccine against otitis media

INVENTOR(S): Thonnard, Joelle

PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 113 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|---|----------|
| WO 9958684 | A2 | 19991118 | WO 1999-EP3257 | 19990507 |
| WO 9958684 | A3 | 20000224 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| CA 2328502 | AA | 19991118 | CA 1999-2328502 | 19990507 |
| AU 9941421 | A1 | 19991129 | AU 1999-41421 | 19990507 |
| AU 737196 | B2 | 20010809 | | |
| EP 1078064 | A2 | 20010228 | EP 1999-924948 | 19990507 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI | | | |
| BR 9911773 | A | 20020305 | BR 1999-11773 | 19990507 |
| JP 2002514425 | T2 | 20020521 | JP 2000-548475 | 19990507 |
| NO 2000005697 | A | 20010110 | NO 2000-5697 | 20001110 |
| PRIORITY APPLN. INFO.: | | | GB 1998-10285 A 19980513 WO 1999-EP3257 W 19990507 | |

AB Claimed are BASB020 polypeptides and polynucleotides encoding
BASB020 polypeptides from *Moraxella catarrhalis* (also known as

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Branhamella catarrhalis) strains, methods for producing such polypeptides by recombinant techniques, and methods for their use in diagnostics for detecting infection by certain pathogens, specifically otitis media, and as vaccines against bacterial infection.

L4 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:736935 HCAPLUS

DOCUMENT NUMBER: 131:348194

TITLE: Protein BASB010 and its encoding polynucleotides from Moraxella catarrhalis strains and use for diagnosis of and vaccine against otitis media

INVENTOR(S): Thonnard, Joelle

PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 100 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|----------|-----------------|----------|
| WO 9958682 | A2 | 19991118 | WO 1999-EP3254 | 19990507 |
| WO 9958682 | A3 | 20000127 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| CA 2328141 | AA | 19991118 | CA 1999-2328141 | 19990507 |
| AU 9942600 | A1 | 19991129 | AU 1999-42600 | 19990507 |
| EP 1078065 | A2 | 20010228 | EP 1999-950353 | 19990507 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: GB 1998-10195 A 19980512
GB 1999-5308 A 19990308
WO 1999-EP3254 W 19990507

AB Claimed are BASB010 polypeptides and polynucleotides encoding BASB010 polypeptides from Moraxella catarrhalis (also known as Branhamella catarrhalis) strains, methods for producing such polypeptides by recombinant techniques, and methods for their use in diagnostics for detecting infection by certain pathogens, specifically otitis media, and as vaccines against bacterial infection.

L4 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:736756 HCAPLUS

DOCUMENT NUMBER: 131:350252

TITLE: Moraxella catarrhalis antigenic proteins and their use for immunization

INVENTOR(S): Cripps, Allan William; Kyd, Jennelle

PATENT ASSIGNEE(S): Cortecs (UK) Limited, UK

SOURCE: PCT Int. Appl., 32 pp.

Searcher : Shears 308-4994

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CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|------------|
| WO 9958563 | A2 | 19991118 | WO 1999-GB1473 | 19990511 |
| WO 9958563 | A3 | 19991229 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| CA 2328130 | AA | 19991118 | CA 1999-2328130 | 19990511 |
| AU 9938383 | A1 | 19991129 | AU 1999-38383 | 19990511 |
| EP 1077999 | A2 | 20010228 | EP 1999-921008 | 19990511 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |
| JP 2002514657 | T2 | 20020521 | JP 2000-548365 | 19990511 |
| NO 2000005670 | A | 20010110 | NO 2000-5670 | 20001110 |
| PRIORITY APPLN. INFO.: | | | GB 1998-10084 | A 19980511 |
| | | | WO 1999-GB1473 | W 19990511 |

AB Novel antigens of *Branhamella catarrhalis* (also known as *Moraxella catarrhalis*) are provided, together with their use in vaccines as well as methods of diagnosis and/or detection. N-terminal and internal peptide sequences are provided for antigenic proteins of mol. mass 20, 30, 35, 44, and 71 kDa.

L4 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:736754 HCAPLUS
DOCUMENT NUMBER: 131:348191
TITLE: Protein BASB009 and its encoding polynucleotides from *Moraxella catarrhalis* strains and use for diagnosis of and vaccine against otitis media
INVENTOR(S): Thonnard, Joelle
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.
SOURCE: PCT Int. Appl., 99 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|---|----------|-----------------|----------|
| WO 9958562 | A2 | 19991118 | WO 1999-EP3262 | 19990510 |
| WO 9958562 | A3 | 20010517 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, | | | |

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AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
CA 2328061 AA 19991118 CA 1999-2328061 19990510
AU 9942601 A1 19991129 AU 1999-42601 19990510
EP 1086127 A1 20010328 EP 1999-950345 19990510
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, FI

PRIORITY APPLN. INFO.: GB 1998-10193 A 19980512
WO 1999-EP3262 W 19990510

AB Claimed are BASB009 polypeptides and polynucleotides encoding
BASB009 polypeptides from *Moraxella catarrhalis* (also known as
Branhamella catarrhalis) strains, methods for producing such
polypeptides by recombinant techniques, and methods for their use in
diagnostics for detecting infection by certain pathogens,
specifically otitis media, and as vaccines against bacterial
infection.

L4 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:723176 HCAPLUS

DOCUMENT NUMBER: 131:347525

TITLE: Moraxella catarrhalis Basb019 proteins and genes
from Moraxella catarrhalis and antigens and
antibodies and therapeutic applications

INVENTOR(S): Ruelle, Jean-Louis

PATENT ASSIGNEE(S): SmithKline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 101 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|----------|-----------------|----------|
| WO 9957277 | A2 | 19991111 | WO 1999-EP3038 | 19990503 |
| WO 9957277 | A3 | 20000203 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| CA 2327316 | AA | 19991111 | CA 1999-2327316 | 19990503 |
| AU 9939315 | A1 | 19991123 | AU 1999-39315 | 19990503 |
| EP 1075521 | A2 | 20010214 | EP 1999-922171 | 19990503 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: GB 1998-9683 A 19980506
WO 1999-EP3038 W 19990503

AB The invention provides *Moraxella catarrhalis* strain ATCC43617 gene
BASB019 polypeptides and polynucleotides encoding BASB019
polypeptides and methods for producing such polypeptides by
recombinant techniques. Variability within the BASB019 gene among

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several *Moraxella catarrhalis* strains was shown by RFLP anal. Also provided are diagnostic, prophylactic and therapeutic uses including prodn. of antisera to recombinant BASB019 and vaccine prodn. and immunizations. A treatment of humans for *Moraxella catarrhalis* disease using antibody directed against Basb019 proteins is described. Lastly, screening assays for antagonists and agonists for BASB019 are described.

L4 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:708913 HCAPLUS

DOCUMENT NUMBER: 131:333042

TITLE: Protein and DNA sequences of *Moraxella catarrhalis* BASB011 gene, and uses thereof in vaccine compositions and in assays for the diagnosis of bacterial infections

INVENTOR(S): Ruelle, Jean-louis

PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 108 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|----------|-----------------|----------|
| WO 9955871 | A1 | 19991104 | WO 1999-EP2764 | 19990420 |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| CA 2326820 | AA | 19991104 | CA 1999-2326820 | 19990420 |
| AU 9940331 | A1 | 19991116 | AU 1999-40331 | 19990420 |
| EP 1071784 | A1 | 20010131 | EP 1999-923457 | 19990420 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: GB 1998-8720 A 19980423
WO 1999-EP2764 W 19990420

AB This invention provides the sequence of the *Moraxella catarrhalis* BASB011 gene, which encodes a protein that has homol. to the HtrA serine protease of *Helicobacter pylori*. The invention also relates to the use of an immunogenic fragment, preferably the extracellular domain, of the provided protein in a vaccine. The invention further relates to the use of the provided protein and/or gene in the diagnosis of bacterial infections, esp. those of *Moraxella*.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:571730 HCAPLUS

DOCUMENT NUMBER: 131:213099

TITLE: Vaccine for *Moraxella catarrhalis*

Searcher : Shears 308-4994

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INVENTOR(S): Murphy, Timothy F.
PATENT ASSIGNEE(S): The Research Foundation of State University of
New York, USA
SOURCE: U.S., 20 pp., Cont.-in-part of U.S. 5,607,846.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| US 5948412 | A | 19990907 | US 1997-810655 | 19970303 |
| US 5607846 | A | 19970304 | US 1994-245758 | 19940517 |
| CA 2189971 | AA | 19951123 | CA 1995-2189971 | 19950420 |

PRIORITY APPLN. INFO.: US 1994-245758 19940517

AB Comps. comprising outer membrane protein E, and peptides and oligopeptides thereof, of *Moraxella catarrhalis* are described. Addnl., nucleotide sequences encoding the protein, peptide, or oligopeptide are disclosed, as well as recombinant vectors contg. these sequences. Protein, peptide, or oligopeptide can be produced from host cell systems contg. these recombinant vectors. Peptides and oligopeptides can also be chem. synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens in antigenic formulations for vaccine applications or for generating antisera of diagnostic or therapeutic use; and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertions into attenuated bacteria in constructing a recombinant bacterial vaccine and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding E as primers and/or probes in mol. diagnostic assays for the detection of *M. catarrhalis*.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:554570 HCAPLUS

DOCUMENT NUMBER: 131:285063

TITLE: Analysis of antigenic structure and human immune response to outer membrane protein CD of *Moraxella catarrhalis*

AUTHOR(S): Murphy, Timothy F.; Kirkham, Charmaine; DeNardin, Ernesto; Sethi, Sanjay

CORPORATE SOURCE: Divisions of Infectious Diseases, Department of Microbiology, State University of New York at Buffalo, Buffalo, NY, 14215, USA

SOURCE: Infection and Immunity (1999), 67(9), 4578-4585
CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *Moraxella catarrhalis* is an important cause of otitis media in children and lower respiratory tract infections in adults with chronic obstructive pulmonary disease (COPD). Outer membrane protein CD (OMP CD) is a 45-kDa **protein** which is a potential **vaccine antigen** to prevent infections

Searcher : Shears 308-4994

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caused by *M. catarrhalis*. Eight monoclonal antibodies were used to study the antigenic structure of the OMP CD mol. by assaying recombinant peptides corresponding to the sequence of the protein. This approach identified two surface-exposed epitopes, including one near the amino terminus (amino acids 25 to 44) and one in the central region of the mol. (amino acids 261 to 331). Assays with serum and sputum supernatants of adults with COPD revealed variable levels of antibodies to OMP CD among individuals. To det. which portions of the OMP CD mol. were recognized by human antibodies, three human serum samples were studied with six recombinant peptides which span the sequence of OMP CD. All three sera contained IgG antibodies which recognized exclusively the peptide corresponding to amino acids 203 to 260 by immunoblot assay. Adsorption expts. with whole bacteria established that some of the human antibodies are directed at surface-exposed epitopes on OMP CD. The authors conclude that OMP CD is a highly conserved mol. which contains at least two sep. epitopes which are exposed on the bacterial surface. While individual adults with COPD show variability in the immune response to OMP CD, a specific region of the OMP CD mol. (amino acids 203 to 260) is important as a target of the human immune response.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L4 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:574816 HCAPLUS

DOCUMENT NUMBER: 129:313152

TITLE: The transferrin binding **protein B** of
Moraxella catarrhalis elicits
bactericidal antibodies and is a potential
vaccine antigen

AUTHOR(S): Myers, Lisa E.; Yang, Yan-Ping; Du, Run-Pan;
Wang, Qijun; Harkness, Robin E.; Schryvers,
Anthony B.; Klein, Michel H.; Loosmore, Sheena
M.

CORPORATE SOURCE: Pasteur Merieux Connaught Canada Research, North
York, ON, M2R 3T4, Can.

SOURCE: Infection and Immunity (1998), 66(9), 4183-4192
CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The transferrin binding protein genes (tbpA and tbpB) from two strains of *Moraxella catarrhalis* have been cloned and sequenced. The genomic organization of the *M. catarrhalis* transferrin binding protein genes is unique among known bacteria in that tbpA precedes tbpB and there is a third gene located between them. The deduced sequences of the *M. catarrhalis* TbpA proteins from two strains were 98% identical, while those of the TbpB proteins from the same strains were 63% identical and 70% similar. The third gene, tentatively called orf3, encodes a protein of approx. 58 kDa that is 98% identical between the two strains. The tbpB genes from four addnl. strains of *M. catarrhalis* were cloned and sequenced, and two potential families of TbpB proteins were identified based on sequence similarities. Recombinant TbpA (rTbpA), rTbpB, and rORF3 proteins were expressed in *Escherichia coli* and purified. RTbpB was shown to retain its ability to bind human transferrin after transfer

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to a membrane, but neither rTbpA nor rORF3 did. Monospecific anti-rTbpA and anti-rTbpB antibodies were generated and used for immunoblot anal., which demonstrated that epitopes of *M. catarrhalis* TbpA and TbpB were antigenically conserved and that there was constitutive expression of the *tbp* genes. In the absence of an appropriate animal model, anti-rTbpA and anti-rTbpB antibodies were tested for their bactericidal activities. The anti-rTbpA antiserum was not bactericidal, but anti-rTbpB antisera were found to kill heterologous strains within the same family. Thus, if bactericidal ability is clin. relevant, a vaccine comprising multiple rTbpB antigens may protect against *M. catarrhalis* disease.

L4 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:543086 HCAPLUS

DOCUMENT NUMBER: 129:174683

TITLE: The 74 kilodalton outer membrane protein from *Moraxella catarrhalis*

INVENTOR(S): Chen, Dexiang; Vandermeid, Karl R.; Mcmichael, John C.; Barniak, Vicki L.

PATENT ASSIGNEE(S): American Cyanamid Company, USA

SOURCE: PCT Int. Appl., 84 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|----------|-----------------|----------|
| WO 9833814 | A1 | 19980806 | WO 1998-US1840 | 19980129 |
| W: | AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | |
| AU 9861393 | A1 | 19980825 | AU 1998-61393 | 19980129 |
| AU 747479 | B2 | 20020516 | | |
| EP 1005487 | A1 | 20000607 | EP 1998-906065 | 19980129 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: US 1997-36827P P 19970131
WO 1998-US1840 W 19980129

AB A protein from the *M. catarrhalis* designated the 74 kD protein is isolated and purified. The 74 kD protein has an amino-terminal amino acid sequence which is conserved among various strains of *M. catarrhalis*. The protein has a mol. wt. of approx. 74.9 kD as measured on a 10% SDS-PAGE gel, while its mol. wt. as measured by mass spectrometry is approx. 74 kD. The 74 kD protein is used to prep. a vaccine compn. which elicits a protective immune response in a mammalian host to protect the host again disease caused by *M. catarrhalis*.

L4 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:126360 HCAPLUS

Searcher : Shears 308-4994

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DOCUMENT NUMBER: 128:191579
TITLE: Epitopes of outer membrane protein copB of Moraxella catarrhalis and their use in vaccines and diagnosis of infection
INVENTOR(S): Hansen, Eric J.; Cope, Leslie D.; Aebi, Christoph
PATENT ASSIGNEE(S): Board of Regents, the University of Texas System, USA; Hansen, Eric J.; Cope, Leslie D.; Aebi, Christoph
SOURCE: PCT Int. Appl., 133 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|----------|-----------------|----------|
| WO 9806851 | A2 | 19980219 | WO 1997-US14221 | 19970812 |
| WO 9806851 | A3 | 19980507 | | |
| W: | AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | |
| AU 9741500 | A1 | 19980306 | AU 1997-41500 | 19970812 |
| AU 740481 | B2 | 20011108 | | |
| EP 920513 | A2 | 19990609 | EP 1997-939404 | 19970812 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: US 1996-23832P P 19960812
WO 1997-US14221 W 19970812

AB The title epitopes of M. catarrhalis CopB as well as their uses in vaccination and diagnosis of M. catarrhalis infection are disclosed. Four CopB antigens were sequenced and their predicted amino acid sequences compared. Regions of conservation and non-conservation were identified, including one non-conserved region that represents an antibody binding region from the strain 035E. A single amino acid change (N to D) in this epitope, at residue 295, abolished reactivity of the antibody 10F3 with CopB. Peptides which only contain residues of this region that are C-terminal to residue 295 did retain reactivity but their reactivity was less than the maximal reactivity achieved in the presence of an asparagine at position 295.

L4 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:785201 HCAPLUS
DOCUMENT NUMBER: 128:72145
TITLE: Characterization of an outer membrane protein of Moraxella catarrhalis
AUTHOR(S): Mathers, Kate E.; Goldblatt, David; Aebi, Christoph; Yu, Rong-Hus; Schryvers, Anthony B.; Hansen, Eric J.
CORPORATE SOURCE: Immunobiology Unit, Institute Child Health,

Searcher : Shears 308-4994

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SOURCE: London, WC1N 1EH, UK
FEMS Immunology and Medical Microbiology (1997),
19(3), 231-236
CODEN: FIMIEV; ISSN: 0928-8244
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To elucidate potential **vaccine antigens**,
Moraxella catarrhalis outer membrane
proteins (OMPs) were studied. We have previously shown an
OMP to be a target for human IgG and have now further characterized
this OMP which appears to have a mol. mass of 84 kDa and to be
distinct from the 81-kDa OMP, CopB. Human transferrin was shown to
bind the 84-kDa OMP alone. N-terminal sequencing of this OMP and
purified *M. catarrhalis* transferrin-binding protein B (TbpB)
revealed homol. both with each other and with the TbpB of
Haemophilus influenzae and *Neisseria meningitidis*. Adsorption of
human anti-serum with purified TbpB from two *M. catarrhalis* strains
abolished or reduced binding of IgG to the 84-kDa OMP from three *M.*
catarrhalis isolates. IgG binding to CopB was unaffected. It is
clear that 84-kDa OMP is distinct from CopB and is a likely homolog
of TbpB.

L4 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:177696 HCAPLUS

DOCUMENT NUMBER: 126:249929

TITLE: The major outer membrane **protein**, CD,
extracted from *Moraxella* (**Branhamella**)
catarrhalis is a potential
vaccine antigen that induces
bactericidal antibodies

AUTHOR(S): Yang, Yan-ping; Myers, Lisa E.; McGuinness,
Ursula; Chong, Pele; Kwok, Yan; Klein, Michel
H.; Harkness, Robin E.

CORPORATE SOURCE: Research Center, Pasteur Merieux Connaught
Canada, 1755 Steeles Ave. West, North York, ON,
M2R 3T4, Can.

SOURCE: FEMS Immunology and Medical Microbiology (1997),
17(3), 187-199
CODEN: FIMIEV; ISSN: 0928-8244

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The major outer membrane protein of *Moraxella* (*Branhamella*)
catarrhalis, CD, was detergent-extd. from the bacterial cell wall
and purified to homogeneity in high yields by a simple process. The
purified protein appeared to exhibit immunogenic properties similar
to those of native CD exposed on the surface of the bacterium.
Antibodies to CD raised in mice specifically bound to intact *B.*
catarrhalis, as detd. by flow cytometry anal. The IgG subclass
distributions of anti-CD antibodies in sera from mice immunized with
purified CD or with *B. catarrhalis* were also similar. CD was found
to be antigenically conserved among a panel of *B. catarrhalis*
isolates, as demonstrated by the consistent reactivities of mouse
anti-CD antisera with a common 60 kDa protein on immunoblots.
Furthermore, convalescent sera collected from patients with otitis
media due to *B. catarrhalis* infection were found to be reactive with
the CD protein by immunoblotting. Finally, the purified protein

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induced antibodies in guinea pigs and mice that exhibited in vitro bactericidal activity against the pathogen. Therefore, the native CD outer membrane **protein** represents a potentially useful **antigen** for inclusion in a **vaccine** against **B. catarrhalis**.

L4 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:135693 HCAPLUS
DOCUMENT NUMBER: 124:185521
TITLE: Vaccine for Moraxella catarrhalis
INVENTOR(S): Murphy, Timothy F.; Bhushan, Reva
PATENT ASSIGNEE(S): Research Foundation of State University of New York, USA
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|----------|
| WO 9531215 | A1 | 19951123 | WO 1995-US5134 | 19950420 |
| W: | AM, AU, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MX, NO, NZ, PL, PT, RO, RU, SI, SK, TJ, TT, UA, UZ, VN | | | |
| RW: | KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | |
| US 5607846 | A | 19970304 | US 1994-245758 | 19940517 |
| CA 2189971 | AA | 19951123 | CA 1995-2189971 | 19950420 |
| AU 9523969 | A1 | 19951205 | AU 1995-23969 | 19950420 |
| AU 709984 | B2 | 19990909 | | |
| EP 759777 | A1 | 19970305 | EP 1995-917165 | 19950420 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE | | | |
| JP 10504444 | T2 | 19980506 | JP 1995-529666 | 19950420 |
| PRIORITY APPLN. INFO.: | | | US 1994-245758 | 19940517 |
| | | | WO 1995-US5134 | 19950420 |

AB Compns. comprising outer membrane protein E, and peptides and oligopeptides thereof, of Moraxella catarrhalis are described. Addnl., nucleotide sequences encoding the protein, peptide, or oligopeptide are disclosed, as well as recombinant vectors contg. these sequences. Protein, peptide, or oligopeptide can be produced from host cell systems contg. these recombinant vectors. Peptides and oligopeptides can also be chem. synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens for vaccine formulations, and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines, for insertions into attenuated bacteria in constructing a recombinant bacterial vaccine and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding E as primers and/or probes in mol. diagnostic assays for the detection of M. catarrhalis.

L4 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:680768 HCAPLUS

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DOCUMENT NUMBER: 123:81585
TITLE: Branhamella catarrhalis outer
membrane-associated protein CD gene and use for
vaccine or immunoassay
INVENTOR(S): Murphy, Timothy F.
PATENT ASSIGNEE(S): Research Foundation of State University of New
York, USA
SOURCE: PCT Int. Appl., 84 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------------------|
| WO 9509025 | A1 | 19950406 | WO 1994-US10932 | 19940927 |
| W: AU, CA, FI, JP, NO, NZ, PL, RU, UA | | | | |
| RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| US 5556755 | A | 19960917 | US 1993-129719 | 19930929 |
| US 5712118 | A | 19980127 | US 1994-306871 | 19940920 |
| AU 9479593 | A1 | 19950418 | AU 1994-79593 | 19940927 |
| AU 701340 | B2 | 19990128 | | |
| EP 737085 | A1 | 19961016 | EP 1994-930490 | 19940927 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE | | | | |
| JP 09503210 | T2 | 19970331 | JP 1994-510417 | 19940927 |
| FI 9601407 | A | 19960521 | FI 1996-1407 | 19960328 |
| PRIORITY APPLN. INFO.: | | | | US 1993-129719 19930929 |
| | | | | US 1994-306871 19940920 |
| | | | | WO 1994-US10932 19940927 |
| AB Compns. comprising outer membrane protein "CD", and peptides and oligopeptides thereof, of Branhamella catarrhalis are described. Addnl., nucleotide sequences encoding the protein, peptide or oligopeptide are disclosed, as well as recombinant vectors contg. these sequences. Protein, peptide or oligopeptide can be produced from host cell systems contg. these recombinant vectors. Peptides and oligopeptides can also be chem. synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens for vaccine formulations, and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertion into attenuated bacteria in constructing a recombinant bacterial vaccine, and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding CD as primers and/or probes in mol. diagnostic assays for the detection of B. catarrhalis. | | | | |

L4 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:189964 HCAPLUS
DOCUMENT NUMBER: 118:189964
TITLE: Methods and compositions relating to useful
antigens of Moraxella catarrhalis
INVENTOR(S): Hansen, Eric J.; Helminen, Merja; Maciver,
Isobel
PATENT ASSIGNEE(S): University of Texas System, USA
SOURCE: PCT Int. Appl., 73 pp.

Searcher : Shears 308-4994

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CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|--|----------|-----------------|----------|
| WO 9303761 | A1 | 19930304 | WO 1992-US6869 | 19920814 |
| W: | AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US | | | |
| RW: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG | | | |
| US 5552146 | A | 19960903 | US 1991-745591 | 19910815 |
| AU 9224878 | A1 | 19930316 | AU 1992-24878 | 19920814 |
| AU 666329 | B2 | 19960208 | | |
| EP 612250 | A1 | 19940831 | EP 1992-918273 | 19920814 |
| EP 612250 | B1 | 19960724 | | |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, SE | | | |
| JP 07501210 | T2 | 19950209 | JP 1992-504481 | 19920814 |
| AT 140627 | E | 19960815 | AT 1992-918273 | 19920814 |
| ES 2092696 | T3 | 19961201 | ES 1992-918273 | 19920814 |
| US 5993826 | A | 19991130 | US 1993-25363 | 19930302 |
| NO 9400502 | A | 19940328 | NO 1994-502 | 19940214 |
| FI 9400681 | A | 19940407 | FI 1994-681 | 19940214 |
| US 5759813 | A | 19980602 | US 1994-193150 | 19940919 |
| US 5599693 | A | 19970204 | US 1995-450002 | 19950525 |
| US 5981213 | A | 19991109 | US 1995-450351 | 19950525 |
| NO 2000002413 | A | 20000509 | NO 2000-2413 | 20000509 |

PRIORITY APPLN. INFO.:

US 1991-745591 A2 19910815
WO 1992-US6869 A 19920814
US 1993-25363 A3 19930302

AB Selected antigenic proteins obtained from the outer membranes of M. catarrhalis are disclosed. These outer membrane proteins (OMPs) have mol. wts. of approx. 30 kDa, 80 kDa, and 200-700 kDa, resp. Studies demonstrated that monoclonal antibodies (MAbs) directed against these proteins confer a protective effect against infection by M. catarrhalis in animal models, demonstrating the potential usefulness of such antibodies in conferring passive immunity as well as the potential use of the OMPs (or variants thereof) in the prepn. of vaccines. DNA segments encoding the OMPs, methods for prepg. the antigens, and diagnostic methods are also disclosed. OMP isolation, anti-OMP MAb prodn., and cloning of genes for the OMPs are described.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 11:06:32 ON 06 SEP 2002)

L5 36 S L4

L6 14 DUP REM L5 (22 DUPLICATES REMOVED)

L6 ANSWER 1 OF 14 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2002-352536 [38] WPIDS

DOC. NO. CPI: C2002-100176

TITLE: New Streptococcus protein for the treatment or prevention of infection or disease caused by Streptococcus bacteria, such as meningitis, and for detecting a compound that binds to the protein.

DERWENT CLASS: B04 C06 D16

Searcher : Shears 308-4994

09/701711

INVENTOR(S): FRASER, C; GRANDI, G; MARGARIT Y ROS, I; MASIGNANI,
V; TELFORD, J; TETTELIN, H
PATENT ASSIGNEE(S): (CHIR-N) CHIRON SPA; (GENO-N) INST GENOMIC RES
COUNTRY COUNT: 98
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| ----- | | | | | |
| WO 2002034771 | A2 | 20020502 | (200238)* | EN | |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC | | | | | |
| MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ | | | | | |
| DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP | | | | | |
| KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ | | | | | |
| NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA | | | | | |
| UG US UZ VN YU ZA ZW | | | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|----------------|----------|
| ----- | | | |
| WO 2002034771 | A2 | WO 2001-GB4789 | 20011029 |

PRIORITY APPLN. INFO: GB 2001-5640 20010307; GB 2000-26333
20001027; GB 2000-28727 20001124

AN 2002-352536 [38] WPIDS

AB WO 200234771 A UPAB: 20020618

NOVELTY - A protein (I) from group B streptococcus (*Streptococcus agalactiae*) or group A streptococcus (*Streptococcus pyogenes*), comprising one of 5483 sequences (S1), given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a protein having 50 % or greater sequence identity to (I);
- (2) a protein comprising a fragment of 7 or more consecutive amino acids from (S1);
- (3) an antibody which binds (I);
- (4) a nucleic acid encoding (I);
- (5) a nucleic acid comprising one of 1057 sequences (S2), given in the specification;
- (6) a nucleic acid comprising a fragment of 10 or more consecutive nucleotides from one of 6540 sequences (S3), given in the specification, which includes the sequences of (S2);
- (7) a nucleic acid comprising a sequence complementary to one of (4) - (6);
- (8) a nucleic acid comprising a sequence having 50 % or greater sequence identity to one of (4) - (7);
- (9) a nucleic acid that can hybridize to (4) - (8), under high stringency conditions;
- (10) a composition comprising (I), or one of (1) - (9);
- (11) the use of (10) in the manufacture of a medicament for the treatment of prevention of infection or disease caused by streptococcus bacteria, particularly *S. agalactiae* and *S. pyogenes*;
- (12) treating a patient comprising administering (10);
- (13) a hybrid protein of formula (F);
- (14) a kit comprising primers for amplifying a template sequence contained within a *Streptococcus* nucleic acid sequence,

where the kit comprises one primer complementary to the template sequence and a second primer complementary to a complement of the template sequence, and the parts of the primers which have complementarity define the termini of the template sequence to be amplified;

(15) a kit comprising two single-stranded oligonucleotides which allow amplification of a Streptococcus template nucleic acid contained in a single- or double-stranded nucleic acid (or mixture of it) where:

(a) one oligonucleotide comprises a primer sequence complementary to the template nucleic acid sequence;

(b) the second oligonucleotide comprises a primer sequence complementary to the complement of the template nucleic acid sequence;

(c) either or both oligonucleotides comprise a sequence(s) not complementary to the template nucleic acid sequence; and

(d) the primer sequences define the termini of the template sequence to be amplified;

(16) a computer readable medium containing one of 12024 sequences (S4), given in the specification;

(17) detecting Streptococcus in a biological sample comprising contacting (4) - (9) with the sample under hybridizing conditions;

(18) determining whether a compound binds to (I), (1), or (2), comprising contacting a test compound with the protein and determining binding;

(19) a compound identified by (18);

(20) a composition comprising (1), (1), or (2) and one of:

(i) a protein antigen from Helicobacter pylori and/or Neisseria meningitidis serogroup B;

(ii) an outer-membrane vesicle (OMV) preparation from N. meningitidis serogroup B;

(iii) a saccharide antigen from N. meningitidis serogroup A, C, W135 and/or Y, or Streptococcus pneumoniae;

(iv) an antigen from hepatitis A, B, or C virus, and/or Bordetella pertussis;

(v) a diphtheria and/or tetanus antigen;

(vi) a saccharide antigen from Haemophilus influenzae B;

(vii) an antigen from N. gonorrhoeae, Chlamydia pneumoniae, C. trachomatis, and/or Porphyromonas gingivalis;

(viii) a polio and/or rabies antigen(s);

(ix) measles, mumps, and/or rubella antigens;

(x) an influenza antigen(s);

(xi) an antigen from Moraxella catarrhalis; and/or

(xii) an antigen from Staphylococcus aureus; and

(21) a composition comprising two or more proteins of (1), (1), or (2).

NH₂-A-(-X-L-)n-B-COOH (F)

X = (I);

L = an optional linker amino acid sequence;

A = an optional N-terminal amino acid sequence;

B = an optional C-terminal amino acid sequence; and

n = an integer greater than 1.

ACTIVITY - Antibacterial; antiinflammatory. No suitable biological data is given.

MECHANISM OF ACTION - Gene therapy; vaccine.

USE - (I), nucleic acids encoding (I), and antibodies that bind (I) are used in the manufacture of medicaments for the treatment of prevention or infection or disease caused by Streptococcus bacteria,

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particularly *S. agalactiae* and *S. pyogenes*. Nucleic acid encoding (I) is used to detect *Streptococcus* in a biological sample. (I) is used to determine whether a compound binds to (I). A composition comprising (I) or a nucleic acid encoding (I), may be used as a vaccine or diagnostic composition (all claimed). The disease caused by *Streptococcus* that is prevented or treated may be meningitis. Nucleic acid encoding (I) may be used to recombinantly produce (I). Antibodies to (I) are used for affinity chromatography, immunoassays, and distinguishing/identifying *Streptococcus* proteins.
Dwg.0/319

L6 ANSWER 2 OF 14 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 2001-159874 [16] WPIDS
DOC. NO. NON-CPI: N2001-116484
DOC. NO. CPI: C2001-047626
TITLE: New BASB122 and BASB124 polypeptides and polynucleotides from *Moraxella catarrhalis* strain ATCC 43617, useful as therapeutic agents or vaccines against bacterial infections, e.g. otitis media or pneumonia.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): THONNARD, J
PATENT ASSIGNEE(S): (SMIK) SMITHKLINE BEECHAM BIOLOGICALS
COUNTRY COUNT: 95
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| WO 2001009337 | A2 | 20010208 | (200116)* | EN | 75 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | | | | | |
| AU 2000065683 | A | 20010219 | (200129) | | |
| EP 1204749 | A2 | 20020515 | (200239) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|----------------|----------|
| WO 2001009337 | A2 | WO 2000-EP7365 | 20000731 |
| AU 2000065683 | A | AU 2000-65683 | 20000731 |
| EP 1204749 | A2 | EP 2000-953120 | 20000731 |
| | | WO 2000-EP7365 | 20000731 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|--------------|
| AU 2000065683 | A Based on | WO 200109337 |
| EP 1204749 | A2 Based on | WO 200109337 |

PRIORITY APPLN. INFO: GB 1999-18036 19990730; GB 1999-18034

Searcher : Shears 308-4994

09/701711

19990730

AN 2001-159874 [16] WPIDS
AB WO 200109337 A UPAB: 20010323

NOVELTY - New isolated polypeptides, comprising either of two 111 amino acid (I) or two 328 amino acid (II) sequences from *Moraxella catarrhalis*, all fully defined in the specification, or an at least 85 % identical sequence over their entire length, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) an isolated polynucleotide encoding the novel polypeptide, comprising:
 - (a) a sequence encoding the novel polypeptide;
 - (b) a sequence having at least 85 % identity to (a) over its entire length;
 - (c) a 336 (III) or 987 (IV) base pair sequence, both fully defined in the specification;
 - (d) a sequence at least 85 % identical to (III) or (IV) over their entire length;
 - (e) the complements of (a)-(d); or
 - (f) a sequence encoding (I) or (II) obtained by screening a library, under stringent conditions, with a labeled probe having (III), (IV), or fragments of them;
- (2) a statement vector or a recombinant live microorganism, comprising the polynucleotide of (1);
- (3) a host cell comprising the vector of (2), or a subcellular fraction or membrane of the host cell expressing the novel polypeptide;
- (4) a process for producing the novel polypeptide, comprising culturing the host cell of (3) under expression conditions, and recovering the polypeptide;
- (5) a process for expressing the polynucleotide of (1), comprising transforming a host cell with the vector of (2), and culturing the cell for expression of the polynucleotide;
- (6) a vaccine composition comprising the novel polypeptide or the polynucleotide of (1), and a carrier;
- (7) an antibody immunospecific for the novel polypeptide or its immunological fragment;
- (8) a method for diagnosing a *M. catarrhalis* infection, comprising identifying the novel polypeptide or the antibody of (7) present within a biological sample; and
- (9) a therapeutic composition comprising at least one antibody against the novel polypeptide.

ACTIVITY - Antibacterial; antiinflammatory; auditory.

MECHANISM OF ACTION - Vaccine; gene therapy.

No biological data is given.

USE - The composition comprising an immunologic amount of the polypeptide or polynucleotide is useful for preparing a medicament for generating an immune response in an animal. The therapeutic composition is useful in treating humans with *M. catarrhalis* infection. (All claimed). The polypeptides may also be used as prophylactic agents of bacterial infections, particularly *M. catarrhalis* infections in mammals, especially humans. The polynucleotides are useful in therapy or prophylaxis, particularly genetic immunization against these infections or diseases. These diseases include otitis media in infants or children, pneumonia in elderlies, sinusitis, nosocomial infections and invasive diseases, chronic otitis media with hearing loss, fluid accumulation in the middle ear, infection of the upper respiratory tract, or

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inflammation of the middle ear. The polypeptides or polynucleotides may also be employed as research reagents and materials for discovering treatments of and diagnostics for diseases, particularly human diseases. In particular, the polypeptides or polynucleotides are useful in the discovery and development of antibacterial compounds, or for diagnosing diseases, staging of the disease, determining the response of an infectious organism to drugs.
Dwg.0/0

L6 ANSWER 3 OF 14 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 2001-159871 [16] WPIDS
DOC. NO. NON-CPI: N2001-116481
DOC. NO. CPI: C2001-047623
TITLE: New BASB118 polypeptides and polynucleotides from Moraxella catarrhalis strain American Type Culture Collection 43617, for use as therapeutic agents or vaccines against bacterial infections, e.g. otitis media or pneumonia.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): THONNARD, J
PATENT ASSIGNEE(S): (SMIK) SMITHKLINE BEECHAM BIOLOGICALS
COUNTRY COUNT: 95
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| WO 2001009334 | A1 | 20010208 | (200116)* | EN | 77 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | | | | | |
| AU 2000068330 | A | 20010219 | (200129) | | |
| EP 1206548 | A1 | 20020522 | (200241) | EN | |
| R: AE AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|----------------|----------|
| WO 2001009334 | A1 | WO 2000-EP7360 | 20000731 |
| AU 2000068330 | A | AU 2000-68330 | 20000731 |
| EP 1206548 | A1 | EP 2000-956353 | 20000731 |
| | | WO 2000-EP7360 | 20000731 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|--------------|
| AU 2000068330 | A Based on | WO 200109334 |
| EP 1206548 | A1 Based on | WO 200109334 |

PRIORITY APPLN. INFO: GB 1999-18208 19990803
AN 2001-159871 [16] WPIDS
AB WO 200109334 A UPAB: 20010323

Searcher : Shears 308-4994

NOVELTY - An isolated polypeptide comprising:

- (a) a sequence of 386 amino acids (I) from *Moraxella catarrhalis*, given in the specification; or
- (b) an amino acid sequence, which has 85% identity to (I), over the entire length of (I), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) an immunogenic fragment of the new polypeptide, in which the immunogenic activity of the fragment is the same as (I);
- (2) isolated polynucleotides, which encode the new polypeptide, comprising:
 - (i) a nucleotide sequence encoding (a) or (b);
 - (ii) a nucleotide sequence that has 85% identity to the nucleotide sequence encoding (I) over the entire coding region;
 - (iii) a 1161 base pair (bp) DNA sequence (II), given in the specification;
 - (iv) a nucleotide sequence that has 85% identity to (II) over the entire length of (II);
 - (v) the complements of (i)-(iv); or
 - (vi) a nucleotide sequence encoding (I) obtainable by screening an appropriate library, under stringent conditions, with a labeled probe having (II) or its fragments;
- (3) an expression vector or a recombinant live microorganism comprising an isolated polynucleotide of (2);
- (4) a host cell comprising the expression vector of (3), or a subcellular fraction or membrane of the host cell expressing the new polypeptide;
- (5) producing the new polypeptide comprising culturing (4) to produce the new polypeptide and recovering it from the culture medium;
- (6) expressing a polynucleotide of (2) comprising transforming a host cell with the expression vector of (3) and culturing the host cell for expression of any of the polynucleotides;
- (7) vaccine compositions comprising the new polypeptide or polynucleotide of (2), and a pharmaceutical carrier;
- (8) an antibody immunospecific for the new polypeptide or immunological fragment;
- (9) diagnosing a *M. catarrhalis* infection comprising identifying the new polypeptide or the antibody of (8) present within a biological sample from an animal suspected of having such an infection; and
- (10) a therapeutic composition comprising an antibody of (8).

ACTIVITY - Antibacterial; antiinflammatory; pulmonary.

MECHANISM OF ACTION - Vaccine; gene therapy. Groups of mice were immunized either with the polypeptide (BASB118) adsorbed onto AlPO₄ (10 micro g BASB118 onto 100 micro g of AlPO₄), with a killed whole cell (kwc) preparation of *M. catarrhalis* strain American type Culture Collection (ATCC) 43617 adsorbed onto AlPO₄, or with 100 micro g AlPO₄ without antigen. The mice were challenged with 5 multiply 10⁵ colony forming units (CFU) of live *M. catarrhalis* strain ATCC 43617 bacteria. The log₁₀ weighted mean number of CFU/lung and the standard deviation 4 hours after challenge was calculated for each group. Sham immunized mice had 5.66 (+/-0.18) log₁₀ CFU/lungs 4 hours after challenge. The kwc preparation induced significant lung clearance as compared to the control group (1.3 log difference). BASB118 vaccine induced a 0.43 log difference in lung clearance, which was significantly different from the control.

USE - A composition comprising an immunologic amount of the new

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polypeptide or polynucleotide encoding it, is useful for preparing a medicament for generating an immune response in an animal. The therapeutic composition is useful in treating humans with M. catarrhalis infection (all claimed). The polypeptide may also be used as a prophylactic agent of bacterial infections, particularly M. catarrhalis infections in mammals, especially humans. The polynucleotides are useful in therapy or prophylaxis, particularly genetic immunization against these infections or diseases. These diseases include otitis media in infants or children, pneumonia in elderlies, sinusitis, nosocomial infections and invasive diseases, chronic otitis media with hearing loss, fluid accumulation in the middle ear, infection of the upper respiratory tract, or inflammation of the middle ear. The polypeptides or polynucleotides may also be employed as research reagents and materials for discovering treatments of and diagnostics for diseases, particularly human diseases. In particular, the new polypeptide or polynucleotides are useful in the discovery and development of antibacterial compounds, or for diagnosing diseases, staging diseases, and determining the response of an infectious organism to drugs.

Dwg.0/1

L6 ANSWER 4 OF 14 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2001-159870 [16] WPIDS

DOC. NO. NON-CPI: N2001-116480

DOC. NO. CPI: C2001-047622

TITLE: New BASB123 polypeptides and polynucleotides from Moraxella catarrhalis strain American type Culture Collection 43617, for use as therapeutic agents or vaccines against bacterial infections, e.g. otitis media or pneumonia.

DERWENT CLASS: B04 D16 S03

INVENTOR(S): THONNARD, J

PATENT ASSIGNEE(S): (SMIK) SMITHKLINE BEECHAM BIOLOGICALS

COUNTRY COUNT: 95

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| WO 2001009333 | A2 | 20010208 | (200116)* | EN | 79 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC | | | | | |
| MW MZ NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE | | | | | |
| DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG | | | | | |
| KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ | | | | | |
| PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN | | | | | |
| YU ZA ZW | | | | | |
| AU 2000069880 | A | 20010219 | (200129) | | |
| EP 1216301 | A2 | 20020626 | (200249) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK | | | | | |
| NL PT RO SE SI | | | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|----------------|----------|
| WO 2001009333 | A2 | WO 2000-EP7296 | 20000727 |
| AU 2000069880 | A | AU 2000-69880 | 20000727 |

Searcher : Shears 308-4994

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EP 1216301 A2

EP 2000-958311 20000727
WO 2000-EP7296 20000727

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|--------------|
| AU 2000069880 | A Based on | WO 200109333 |
| EP 1216301 | A2 Based on | WO 200109333 |

PRIORITY APPLN. INFO: GB 1999-17975 19990730

AN 2001-159870 [16] WPIDS

AB WO 200109333 A UPAB: 20010323

NOVELTY - An isolated polypeptide comprising:

(a) a sequence comprising one of two 167 amino acid sequences (designated I and II) from *Moraxella catarrhalis*, given in the specification; or

(b) an amino acid sequence, which has 85% identity to (I) or (II), over the entire length of (I) or (II), respectively, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an immunogenic fragment of the new polypeptide, in which the immunogenic activity of the fragment is the same as (I) or (II);

(2) isolated polynucleotides, which encode the new polypeptide, comprising:

(i) a nucleotide sequence encoding (a) or (b);

(ii) a nucleotide sequence that has 85% identity to the nucleotide sequence encoding (I) or (II) over the entire coding region;

(iii) a 504 base pair (bp) (III) or 501 bp (IV) DNA sequence, given in the specification;

(iv) a nucleotide sequence that has 85% identity to (III) or (IV) over the entire length of (III) or (IV), respectively;

(v) the complements of (i)-(iv); or

(vi) a nucleotide sequence encoding (I) or (II) obtainable by screening an appropriate library, under stringent conditions, with a labeled probe having (III), (IV), or fragments of (III) or (IV);

(3) an expression vector or a recombinant live microorganism comprising a polynucleotide of (2);

(4) a host cell comprising the expression vector of (3), or a subcellular fraction or membrane of the host cell expressing the new polypeptide;

(5) producing the new polypeptide comprising culturing (4) to produce the polypeptide and recovering it from the culture medium;

(6) expressing a polynucleotide of (2) comprising transforming a host cell with the expression vector of (3) and culturing the host cell for expression of any of the polynucleotides;

(7) vaccine compositions comprising the new polypeptide or polynucleotide of (2), and a pharmaceutical carrier;

(8) an antibody immunospecific for the new polypeptide or an immunological fragment;

(9) diagnosing a *M. catarrhalis* infection comprising identifying the new polypeptide or the antibody of (8) present within a biological sample from an animal suspected of having such an infection; and

(10) a therapeutic composition comprising an antibody of (8).

ACTIVITY - Antibacterial.

MECHANISM OF ACTION - Vaccine; gene therapy. Clinical details

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are described but no results are given.

USE - A composition comprising an immunologic amount of the new polypeptide or polynucleotide encoding it, is useful for preparing a medicament for generating an immune response in an animal. The therapeutic composition is useful in treating humans with M. catarrhalis infection (all claimed). The polypeptides may also be used as prophylactic agents of bacterial infections, particularly M. catarrhalis infections in mammals, especially humans. The polynucleotides are useful in therapy or prophylaxis, particularly genetic immunization against these infections or diseases. These diseases include otitis media in infants or children, pneumonia in elderlies, sinusitis, nosocomial infections and invasive diseases, chronic otitis media with hearing loss, fluid accumulation in the middle ear, infection of the upper respiratory tract, or inflammation of the middle ear. The polypeptide or polynucleotides may also be employed as research reagents and materials for discovering treatments of and diagnostics for diseases, particularly human diseases. In particular, the polypeptide or polynucleotides are useful in the discovery and development of antibacterial compounds, or for diagnosing diseases, staging of diseases, and determining the response of an infectious organism to drugs.
Dwg.0/2

L6 ANSWER 5 OF 14 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 2001-168707 [17] WPIDS
DOC. NO. NON-CPI: N2001-121639
DOC. NO. CPI: C2001-050432
TITLE: New BASB125 polypeptide isolated from Moraxella catarrhalis for treating, preventing and diagnosing diseases associated with M. catarrhalis infection in mammals, e.g. otitis media in humans.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): THONNARD, J
PATENT ASSIGNEE(S): (SMIK) SMITHKLINE BEECHAM BIOLOGICALS
COUNTRY COUNT: 95
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|----|
| WO 2001009331 | A2 | 20010208 | (200117)* | EN | 73 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | | | | | |
| AU 2000064393 | A | 20010219 | (200129) | | |
| EP 1212424 | A2 | 20020612 | (200239) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|----------------|----------|
| WO 2001009331 | A2 | WO 2000-EP7291 | 20000727 |
| AU 2000064393 | A | AU 2000-64393 | 20000727 |

Searcher : Shears 308-4994

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EP 1212424 A2

EP 2000-951466 20000727
WO 2000-EP7291 20000727

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|--------------|
| AU 2000064393 | A Based on | WO 200109331 |
| EP 1212424 | A2 Based on | WO 200109331 |

PRIORITY APPLN. INFO: GB 1999-18041 19990730

AN 2001-168707 [17] WPIDS

AB WO 200109331 A UPAB: 20010328

NOVELTY - An isolated polypeptide having at least 85 % identity to a sequence (I) of 134 amino acids for a *Moraxella catarrhalis* BASB125 polypeptide, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) an isolated polypeptide of sequence (I);
- (2) immunogenic fragments of the polypeptide having the same immunogenic activity as sequence (I);
- (3) an isolated polynucleotide:
 - (i) having 85 % identity to a polynucleotide encoding the polypeptide, especially 85 % identity to sequence (II) of 405 base pairs (bp) encoding sequence (I);
 - (ii) complementary to a polynucleotide of (i);
 - (iii) encoding the new polypeptide; and
 - (iv) encoding sequence (I) and obtained by screening a library under stringent conditions using sequence (II) or a fragment as a probe;
- (4) vectors or recombinant live microorganisms comprising the polynucleotide;
- (5) host cells comprising the vector and subcellular fragments/membranes of the host cells expressing the polypeptide;
- (6) producing the new polypeptide comprising culturing the host cell of (5) to produce the polypeptide and recovering the polypeptide from the culture medium;
- (7) expressing (3) comprising transforming a host cell with an expression vector of (4) and culturing the host cell to express the polynucleotide;
- (8) vaccine compositions comprising the new polypeptide or (3);
- (9) antibodies specific for the new polypeptide, or immunological fragments of (2);
- (10) diagnosing a *M. catarrhalis* infection comprising identifying the new polypeptide or an antibody immunospecific for the polypeptide, present within a biological sample from an animal suspected of having the infection;
- (11) preparing a medicament for generating an immune response in an animal using a composition comprising the new polypeptide or (3); and
- (12) a therapeutic composition for treating humans with *M. catarrhalis* disease comprising an antibody against the new polypeptide.

ACTIVITY - Antibacterial. A sequence (II) of 405 base pairs (bp) was isolated from *M. catarrhalis* strain American Type Culture Collection (ATCC) 43617 by standard molecular biological techniques a sequence (I) of 134 amino acids deduced. Mice were immunized with a BASB125 vaccine or a killed whole cell (kwc) *M. catarrhalis*

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preparation, or were sham immunized. After a booster, mice were challenged by instillation of bacterial suspension into the nostril under anaesthesia. Mice were killed 30 minutes-24 hours after challenge and lungs removed aseptically and homogenized. Homogenates were diluted and plated onto agar plates, and log10 weighted mean number of colony forming units/lung determined by counting. BASB125 vaccine and kwc preparations induced significant lung clearance of *M. catarrhalis* versus controls. No experimental data is given.

MECHANISM OF ACTION - Vaccine; gene therapy.

USE - The polypeptide, immunogenic fragments of the polypeptide, fusion proteins of the **polypeptide**, or polynucleotides encoding the **polypeptide** are used in **vaccine** compositions (claimed), optionally with another **M. catarrhalis antigen** (claimed). They can also be included in medicaments for use in generating an immune response in an animal (claimed). The vaccines and medicaments are useful in preventing and/or treating microbial diseases, especially diseases associated with *M. catarrhalis* infection in mammals (especially humans). The polypeptides/polynucleotides may be used to produce antibodies, which can be used in compositions useful therapeutically to treat humans with *M. catarrhalis* diseases (claimed). *M. catarrhalis* is a Gram-negative bacteria frequently isolated from the human upper respiratory tract and responsible for several pathologies in humans e.g. otitis media in children, pneumonia, sinusitis etc. The polypeptides, polynucleotides and antibodies are also useful diagnostically e.g. in the detection of the polypeptides/antibodies in a biological sample from an animal to diagnose *M. catarrhalis* infection (claimed). The diagnostic assays are useful e.g. to detect diseases, determine the stage and type of infection, determine the effect of drugs etc. The polypeptides and polynucleotides can also be used to detect antagonists and agonists useful e.g. in preventing, inhibiting and/or treating disease. The polynucleotides are also useful in producing hybridization probes to isolate sequences encoding BASB125 and similar sequences.
Dwg.0/0

L6 ANSWER 6 OF 14 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 2001371311 MEDLINE
DOCUMENT NUMBER: 21246653 PubMed ID: 11349016
TITLE: Conservation of outer membrane protein E among strains of *Moraxella catarrhalis*.
AUTHOR: Murphy T F; Brauer A L; Yuskiw N; McNamara E R; Kirkham C
CORPORATE SOURCE: Division of Infectious Diseases, Department of Medicine, State University of New York at Buffalo, 14215, USA.. murphyt@acsu.buffalo.edu
CONTRACT NUMBER: AI28304 (NIAID)
SOURCE: INFECTION AND IMMUNITY, (2001 Jun) 69 (6) 3576-80. Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200106
ENTRY DATE: Entered STN: 20010702
Last Updated on STN: 20010702
Entered Medline: 20010628
AB Outer membrane protein E (OMP E) is a 50-kDa protein of *Moraxella*

Searcher : Shears 308-4994

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catarrhalis which has several features that suggest that the protein may be an effective vaccine antigen. To assess the conservation of OMP E among strains of *M. catarrhalis*, 22 isolates were studied with eight monoclonal antibodies which recognize epitopes on different regions of the protein. Eighteen of 22 strains were reactive with all eight antibodies. The sequences of ompE from 16 strains of *M. catarrhalis* were determined, including the 4 strains which were nonreactive with selected monoclonal antibodies. Analysis of sequences indicate a high degree of conservation among strains, with sequence differences clustered in limited regions of the gene. To assess the stability of ompE during colonization of the human respiratory tract, the sequences of ompE of isolates collected from patients colonized with the same strain for 3 to 9 months were determined. The sequences remained unchanged. These results indicate that OMP E is highly conserved among strains of *M. catarrhalis*, and preliminary studies indicate that the gene which encodes OMP E remains stable during colonization of the human respiratory tract.

L6 ANSWER 7 OF 14 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 2000-271440 [23] WPIDS
DOC. NO. NON-CPI: N2000-203227
DOC. NO. CPI: C2000-082932
TITLE: Novel BASB034 polynucleotides and polypeptides from *Moraxella catarrhalis* used to prepare vaccines against bacterial infections.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): RUELLE, J
PATENT ASSIGNEE(S): (SMIK) SMITHKLINE BEECHAM BIOLOGICALS
COUNTRY COUNT: 90
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|------|----------|-----------|----|-----|
| ----- | | | | | |
| WO 2000015802 | A1 | 20000323 | (200023)* | EN | 106 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC | | | | | |
| MW NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM | | | | | |
| EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ | | | | | |
| LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD | | | | | |
| SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW | | | | | |
| AU 9958632 | A | 20000403 | (200034) | | |
| NO 2001001263 | A | 20010430 | (200134) | | |
| BR 9914492 | A | 20010626 | (200140) | | |
| EP 1114160 | A1 | 20010711 | (200140) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK | | | | | |
| NL PT RO SE SI | | | | | |
| CZ 2001000927 | A3 | 20010815 | (200157) | | |
| KR 2001085794 | A | 20010907 | (200218) | | |
| HU 2001003945 | A2 | 20020228 | (200223) | | |
| CN 1326509 | A | 20011212 | (200225) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|----------------|----------|
| ----- | | | |
| WO 2000015802 | A1 | WO 1999-EP6781 | 19990914 |
| AU 9958632 | A | AU 1999-58632 | 19990914 |

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| | | |
|------------------|----------------|----------|
| NO 2001001263 A | WO 1999-EP6781 | 19990914 |
| | NO 2001-1263 | 20010313 |
| BR 9914492 A | BR 1999-14492 | 19990914 |
| | WO 1999-EP6781 | 19990914 |
| EP 1114160 A1 | EP 1999-946171 | 19990914 |
| | WO 1999-EP6781 | 19990914 |
| CZ 2001000927 A3 | WO 1999-EP6781 | 19990914 |
| | CZ 2001-927 | 19990914 |
| KR 2001085794 A | KR 2001-703287 | 20010314 |
| HU 2001003945 A2 | WO 1999-EP6781 | 19990914 |
| | HU 2001-3945 | 19990914 |
| CN 1326509 A | CN 1999-813243 | 19990914 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|--------------|
| AU 9958632 | A Based on | WO 200015802 |
| BR 9914492 | A Based on | WO 200015802 |
| EP 1114160 | A1 Based on | WO 200015802 |
| CZ 2001000927 | A3 Based on | WO 200015802 |
| HU 2001003945 | A2 Based on | WO 200015802 |

PRIORITY APPLN. INFO: GB 1998-20002 19980914

AN 2000-271440 [23] WPIDS

AB WO 200015802 A UPAB: 20000516

NOVELTY - Isolated BASB034 polypeptides from *Moraxella catarrhalis* are new.

DETAILED DESCRIPTION - An isolated BASB034 polypeptide (I) is new, and comprises an amino acid sequence which has at least 85% or 95% identity to, or is, one of the four fully defined 442 amino acid sequences given in the specification ((Ia)-(Id)).

INDEPENDENT CLAIMS are also included for the following:

(1) an immunogenic fragment of (I) in which the immunogenic activity is substantially the same as (Ia)-(Id);

(2) an isolated polynucleotide encoding (I), or a complementary nucleotide;

(3) an isolated polynucleotide which has at least 85% identity to a nucleotide encoding (I), or a complementary nucleotide;

(4) an isolated polynucleotide (II) which comprises a sequence which has at least 85% or 95% identity to over the entire length of, or is, one of the four fully defined 1329 base pair (bp) sequences given in the specification, or its complement;

(5) an isolated polynucleotide encoding (Ia)-(Id), obtainable by screening an appropriate library under stringent hybridization conditions with a labeled probe having the sequence of (II), or its fragment;

(6) an expression vector or recombinant live microorganism comprising (II), or the polynucleotides of (2), (3), and (5);

(7) a host cell comprising the expression vector of (6), or a subcellular fraction of that cell expressing (I);

(8) producing (I), comprising culturing the host cell of (7) under conditions sufficient for the production of the polypeptide, and recovering the polypeptide from the culture medium;

(9) expressing (II) or the polynucleotides of (2), (3) or (5), comprising transforming a host cell with a vector comprising at least one of these polynucleotides, and culturing the cell under conditions sufficient for expression of the polynucleotide;

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- (10) a vaccine composition comprising an effective amount of (I), (II) or the polynucleotides of (2), (3) or (5);;
- (11) an antibody immunospecific for (I), or the fragment of (1);
- (12) diagnosing a *Moraxella* infection, comprising identifying (I), or an antibody that is immunospecific for (I), present within a biological sample from an animal suspected of having such an infection;
- (13) use of a composition comprising an immunologically effective amount of (I) or (II) or the polynucleotides of (2), (3) or (5) in the preparation of a medicament for use in generating an immune response in an animal; and
- (14) a therapeutic composition useful in treating humans with *M. catarrhalis*, comprising at least one antibody directed against (I) and a pharmaceutically acceptable carrier.

ACTIVITY - None given.

MECHANISM OF ACTION - None given.

USE - The polynucleotides and polypeptides may be employed as research reagents and material for the discovery of treatments and diagnostics for diseases, particularly human diseases. They are particularly used to diagnose and treat *M. catarrhalis* infections (claimed). They can be used for diagnosis of disease, staging of disease, or determining response of an infectious organism to drugs. The polynucleotides may be used as a source for hybridization probes, and for screening of genetic mutations, serotype, organism or strain identification, identification of mutations in BASB034 sequences, and as components of arrays which are useful for diagnostic and prognostic purposes. The polypeptides can be used to produce antibodies. The polypeptides can also be used in vaccine formulations, and to identify agonists and antagonists. The polypeptides, antibodies, agonists and antagonists (which are bacteriostatic) are used for the treatment and prevention of diseases such as otitis media in infants and children, pneumonia in elderlies, sinusitis, nosocomial infections and invasive diseases, and chronic otitis media with hearing loss. The polypeptides, agonists and antagonists are also used for screening of antibacterial drugs.

ADVANTAGE - The frequency of *Moraxella catarrhalis* infections has risen dramatically, and it is no longer common to isolate *M. catarrhalis* strains that are resistant to standard antibiotics. The BASB034 products of the invention can be used screen for new antibacterial compounds that may target these resistant bacteria.
Dwg.0/6

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|-------------------|---|---------------------|-------------|
| L6 | ANSWER 8 OF 14 | MEDLINE | DUPLICATE 2 |
| ACCESSION NUMBER: | 1999386849 | MEDLINE | |
| DOCUMENT NUMBER: | 99386849 | PubMed ID: 10456903 | |
| TITLE: | Analysis of antigenic structure and human immune response to outer membrane protein CD of <i>Moraxella catarrhalis</i> . | | |
| AUTHOR: | Murphy T F; Kirkham C; DeNardin E; Sethi S | | |
| CORPORATE SOURCE: | Divisions of Infectious Diseases, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, Buffalo, New York 14215, USA.. murphyt@acsu.buffalo.edu | | |
| CONTRACT NUMBER: | AI28304 (NIAID) | | |
| SOURCE: | INFECTION AND IMMUNITY, (1999 Sep) 67 (9) 4578-85. Journal code: 0246127. ISSN: 0019-9567. | | |

Searcher : Shears 308-4994

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PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199910
ENTRY DATE: Entered STN: 19991014
Last Updated on STN: 19991014
Entered Medline: 19991005

AB Moraxella catarrhalis is an important cause of otitis media in children and lower respiratory tract infections in adults with chronic obstructive pulmonary disease (COPD). Outer membrane protein CD (OMP CD) is a 45-kDa **protein** which is a potential **vaccine antigen** to prevent infections caused by **M. catarrhalis**. Eight monoclonal antibodies were used to study the antigenic structure of the OMP CD molecule by assaying recombinant peptides corresponding to the sequence of the protein. This approach identified two surface-exposed epitopes, including one near the amino terminus (amino acids 25 to 44) and one in the central region of the molecule (amino acids 261 to 331). Assays with serum and sputum supernatants of adults with COPD revealed variable levels of antibodies to OMP CD among individuals. To determine which portions of the OMP CD molecule were recognized by human antibodies, three human serum samples were studied with six recombinant peptides which span the sequence of OMP CD. All three sera contained immunoglobulin G antibodies which recognized exclusively the peptide corresponding to amino acids 203 to 260 by immunoblot assay. Adsorption experiments with whole bacteria established that some of the human antibodies are directed at surface-exposed epitopes on OMP CD. We conclude that OMP CD is a highly conserved molecule which contains at least two separate epitopes which are exposed on the bacterial surface. While individual adults with COPD show variability in the immune response to OMP CD, a specific region of the OMP CD molecule (amino acids 203 to 260) is important as a target of the human immune response.

L6 ANSWER 9 OF 14 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 2000036213 MEDLINE
DOCUMENT NUMBER: 20036213 PubMed ID: 10571435
TITLE: Antibody response to outer membrane proteins of Moraxella catarrhalis in children with otitis media.
AUTHOR: Mathers K; Leinonen M; Goldblatt D
CORPORATE SOURCE: Immunobiology Unit, Institute of Child Health, London, UK.
SOURCE: PEDIATRIC INFECTIOUS DISEASE JOURNAL, (1999 Nov) 18 (11) 982-8.
Journal code: 8701858. ISSN: 0891-3668.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991203

AB BACKGROUND: Moraxella catarrhalis is an important cause of bacterial otitis media, and a vaccine to prevent this disease would be highly desirable. Analysis of the dominant antigens on the surface of M.

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catarrhalis recognized by the human immune response to infection might aid in such a search. Such analysis would be most informative when studied in the eventual target age group for the vaccine; thus we have studied the immune response to *M. catarrhalis* in infants with otitis media. METHODS: Eighteen infants (mean age, 9.4 months) experiencing an episode of otitis media caused by *M. catarrhalis* were studied. Acute and convalescent antibody responses were studied by whole cell enzyme-linked immunosorbent assay (heterologous strain) and by immunoblotting of outer membrane proteins (OMPs). RESULTS: Specific IgG was detected in 17% of acute serum samples and in 61% of convalescent sera. A rise in specific IgG was detected in 10 of 12 (83%) children 8 months of age or older, compared with 1 of 6 (17%) in younger patients ($P = 0.0128$). Immunoblotting revealed antibody binding to several OMPs with some detectable cross-reactivity. Four dominant OMP targets were identified, corresponding to UspA, TbpB, CopB and a approximately 60-kDa protein. CONCLUSIONS: A combination of **antigens** might form the most suitable basis for a *M. catarrhalis* vaccine designed to prevent otitis media in this age group.

L6 ANSWER 10 OF 14 MEDLINE DUPLICATE 4
ACCESSION NUMBER: 1999115543 MEDLINE
DOCUMENT NUMBER: 99115543 PubMed ID: 9916077
TITLE: Use of an isogenic mutant constructed in *Moraxella catarrhalis* To identify a protective epitope of outer membrane protein B1 defined by monoclonal antibody 11C6.
AUTHOR: Luke N R; Russo T A; Luther N; Campagnari A A
CORPORATE SOURCE: Department of Microbiology, State University of New York at Buffalo, Buffalo, New York 14214, USA.
SOURCE: INFECTION AND IMMUNITY, (1999 Feb) 67 (2) 681-7.
Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF105251
ENTRY MONTH: 199903
ENTRY DATE: Entered STN: 19990324
Last Updated on STN: 19990324
Entered Medline: 19990309

AB *Moraxella catarrhalis*-induced otitis media continues to be a significant cause of infection in young children, prompting increased efforts at identifying effective **vaccine antigens**. We have previously demonstrated that *M. catarrhalis* expresses specific outer membrane **proteins** (OMPs) in response to iron limitation and that this organism can utilize transferrin and lactoferrin for in vitro growth. One of these proteins, which binds human transferrin, is OMP B1. As the human host presents a naturally iron-limited environment, proteins, like OMP B1, which are expressed in response to this nutritional stress are potential vaccine antigens. In this study, we have developed monoclonal antibody (MAb) 11C6, which reacts to a surface-exposed epitope of OMP B1 expressed by *M. catarrhalis* 7169. This antibody was used to clone ompB1, and sequence analysis suggested that OMP B1 is the *M. catarrhalis* homologue to the transferrin binding protein B described for pathogenic

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Neisseriaceae, Haemophilus influenzae, Actinobacillus pleuropneumoniae, and M. catarrhalis. Expression of recombinant OMP B1 on the surface of Escherichia coli confers transferrin binding activity, confirming that this protein is likely involved in iron acquisition. In addition, ompB1 was used to construct an isogenic mutant in M. catarrhalis 7169. This mutant, termed 7169b12, was used as the control in bactericidal assays designed to determine if OMP B1 elicits protective antibodies. In the presence of MAb 11C6 and human complement, wild-type 7169 demonstrated a 99% decline in viability, whereas the ompB1 isogenic mutant was resistant to this bactericidal activity. Further analysis with MAb 11C6 revealed the presence of this OMP B1 epitope on 31% of the clinical isolates tested. These data suggest that OMP B1 is a potential vaccine antigen against M. catarrhalis infections.

L6 ANSWER 11 OF 14 MEDLINE DUPLICATE 5
ACCESSION NUMBER: 1998380363 MEDLINE
DOCUMENT NUMBER: 98380363 PubMed ID: 9712766
TITLE: The transferrin binding **protein B** of **Moraxella catarrhalis** elicits bactericidal antibodies and is a potential **vaccine antigen**.
AUTHOR: Myers L E; Yang Y P; Du R P; Wang Q; Harkness R E; Schryvers A B; Klein M H; Loosmore S M
CORPORATE SOURCE: Pasteur Merieux Connaught Canada Research, North York, Ontario, Canada M2R 3T4.
SOURCE: INFECTION AND IMMUNITY, (1998 Sep) 66 (9) 4183-92. Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF039311; GENBANK-AF039312; GENBANK-AF039313; GENBANK-AF039314; GENBANK-AF039315; GENBANK-AF039316
ENTRY MONTH: 199810
ENTRY DATE: Entered STN: 19981020
Last Updated on STN: 19981020
Entered Medline: 19981002

AB The transferrin binding protein genes (tbpA and tbpB) from two strains of Moraxella catarrhalis have been cloned and sequenced. The genomic organization of the M. catarrhalis transferrin binding protein genes is unique among known bacteria in that tbpA precedes tbpB and there is a third gene located between them. The deduced sequences of the M. catarrhalis TbpA proteins from two strains were 98% identical, while those of the TbpB proteins from the same strains were 63% identical and 70% similar. The third gene, tentatively called orf3, encodes a protein of approximately 58 kDa that is 98% identical between the two strains. The tbpB genes from four additional strains of M. catarrhalis were cloned and sequenced, and two potential families of TbpB proteins were identified based on sequence similarities. Recombinant TbpA (rTbpA), rTbpB, and rORF3 proteins were expressed in Escherichia coli and purified. rTbpB was shown to retain its ability to bind human transferrin after transfer to a membrane, but neither rTbpA nor rORF3 did. Monospecific anti-rTbpA and anti-rTbpB antibodies were generated and used for immunoblot analysis, which demonstrated that epitopes of M. catarrhalis TbpA and TbpB were antigenically conserved and that there was constitutive expression of the tbp genes. In the absence

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of an appropriate animal model, anti-rTbpA and anti-rTbpB antibodies were tested for their bactericidal activities. The anti-rTbpA antiserum was not bactericidal, but anti-rTbpB antisera were found to kill heterologous strains within the same family. Thus, if bactericidal ability is clinically relevant, a vaccine comprising multiple rTbpB antigens may protect against *M. catarrhalis* disease.

L6 ANSWER 12 OF 14 MEDLINE DUPLICATE 6
ACCESSION NUMBER: 1998114138 MEDLINE
DOCUMENT NUMBER: 98114138 PubMed ID: 9453393
TITLE: Characterisation of an outer membrane protein of *Moraxella catarrhalis*.
AUTHOR: Mathers K E; Goldblatt D; Aebi C; Yu R; Schryvers A B; Hansen E J
CORPORATE SOURCE: Immunobiology Unit, Institute of Child Health, London, UK.
CONTRACT NUMBER: AI-36344 (NIAID)
SOURCE: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1997 Nov) 19 (3) 231-6.
Journal code: 9315554. ISSN: 0928-8244.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 19980224
Last Updated on STN: 19980224
Entered Medline: 19980212

AB To elucidate potential **vaccine antigens**, *Moraxella catarrhalis* outer membrane **proteins** (OMPs) were studied. We have previously shown an OMP to be a target for human IgG and have now further characterised this OMP which appears to have a molecular mass of 84 kDa and to be distinct from the 81-kDa OMP, CopB. Human transferrin was shown to bind the 84-kDa OMP alone. N-terminal sequencing of this OMP and purified *M. catarrhalis* transferrin binding protein B (TbpB) revealed homology both with each other and with the TbpB of *Haemophilus influenzae* and *Neisseria meningitidis*. Adsorption of human anti-serum with purified TbpB from two *M. catarrhalis* strains abolished or reduced binding of IgG to the 84-kDa OMP from three *M. catarrhalis* isolates. IgG binding to CopB was unaffected. It is clear that the 84-kDa OMP is distinct from CopB and is a likely homologue of TbpB.

L6 ANSWER 13 OF 14 MEDLINE DUPLICATE 7
ACCESSION NUMBER: 97247713 MEDLINE
DOCUMENT NUMBER: 97247713 PubMed ID: 9093840
TITLE: The major outer membrane **protein**, CD, extracted from *Moraxella (Branhamella) catarrhalis* is a potential **vaccine antigen** that induces bactericidal antibodies.
AUTHOR: Yang Y P; Myers L E; McGuinness U; Chong P; Kwok Y; Klein M H; Harkness R E
CORPORATE SOURCE: Research Center, Pasteur Merieux Connaught Canada, North York, Ont., Canada.. ypyang@ca.pmc-vacc.com
SOURCE: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1997 Mar) 17 (3) 187-99.
Journal code: 9315554. ISSN: 0928-8244.

09/701711

PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199705
ENTRY DATE: Entered STN: 19970609
Last Updated on STN: 19970609
Entered Medline: 19970529

AB The major outer membrane protein of *Moraxella* (Branhamella) catarrhalis, CD, was detergent-extracted from the bacterial cell wall and purified to homogeneity in high yields by a simple process. The purified protein appeared to exhibit immunogenic properties similar to those of native CD exposed on the surface of the bacterium. Antibodies to CD raised in mice specifically bound to intact *B. catarrhalis*, as determined by flow cytometry analysis. The IgG subclass distributions of anti-CD antibodies in sera from mice immunized with purified CD or with *B. catarrhalis* were also similar. CD was found to be antigenically conserved among a panel of *B. catarrhalis* isolates, as demonstrated by the consistent reactivities of mouse anti-CD antisera with a common 60 kDa protein on immunoblots. Furthermore, convalescent sera collected from patients with otitis media due to *B. catarrhalis* infection were found to be reactive with the CD protein by immunoblotting. Finally, the purified protein induced antibodies in guinea pigs and mice that exhibited in vitro bactericidal activity against the pathogen. Therefore, the native CD outer membrane **protein** represents a potentially useful **antigen** for inclusion in a **vaccine** against *B. catarrhalis*.

L6 ANSWER 14 OF 14 MEDLINE DUPLICATE 8
ACCESSION NUMBER: 95050224 MEDLINE
DOCUMENT NUMBER: 95050224 PubMed ID: 7961416
TITLE: Molecular cloning and characterization of outer membrane protein E of *Moraxella* (Branhamella) catarrhalis.
AUTHOR: Bhushan R; Craigie R; Murphy T F
CORPORATE SOURCE: Laboratory of Molecular Biology, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Maryland 20892.
CONTRACT NUMBER: AI28304 (NIAID)
SOURCE: JOURNAL OF BACTERIOLOGY, (1994 Nov) 176 (21) 6636-43.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-L31788; GENBANK-M37714
ENTRY MONTH: 199411
ENTRY DATE: Entered STN: 19950110
Last Updated on STN: 19950110
Entered Medline: 19941130

AB Outer membrane **protein** E (OMP E) is a 50-kDa **protein** of *Moraxella* (Branhamella) catarrhalis. It is a potential **vaccine** **antigen** because it is expressed on the surface of the bacterium and has antigenic determinants which are conserved among most strains of *M. catarrhalis*. To clone the gene encoding OMP E, an EMBL-3 genomic library of strain 25240 was screened with a family of

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degenerate oligonucleotides based on the amino-terminal protein sequence. The OMP E gene was identified in one of the six positive clones by Southern blot analysis. An open reading frame of 1,377 bp encoding a protein of 460 amino acids was identified. The calculated molecular mass of the mature protein of 436 amino acid residues was 47.03 kDa, which correlated well with the results of sodium dodecyl sulfate-polyacrylamide gel electrophoresis. The protein product of the OMP E gene had a leader peptide of 25 amino acids and a signal peptidase 1 cleavage site similar to those of known OMPs of *Escherichia coli*. The transcription initiation site of the OMP E gene was mapped by primer extension to be 78 nucleotides upstream of the ATG start codon. Borderline homology was found to the FadL protein of *E. coli* (49.1% similarity and 25.6% identity), which is involved in the binding and transport of fatty acids. Analysis of restriction fragment length polymorphisms of the OMP E genes of 19 different strains of *M. catarrhalis* showed that the OMP E gene is highly conserved. (ABSTRACT TRUNCATED AT 250 WORDS)

~~FILE USPTF001~~ ENTERED AT 11:07:51 ON 06 SEP 2002

L7 22 S L4

L7 ANSWER 1 OF 22 USPTF001

ACCESSION NUMBER: 2002:217055 USPTF001
TITLE: Transferrin receptor genes of *Moraxella*
INVENTOR(S): Myers, Lisa E., Guelph, CANADA
Schryvers, Anthony B., Calgary, CANADA
Harkness, Robin E., Willowdale, CANADA
Loosmore, Sheena M., Aurora, CANADA
Du, Run-Pan, Thornhill, CANADA
Yang, Yan-Ping, Willowdale, CANADA
Klein, Michel H., Willowdale, CANADA
PATENT ASSIGNEE(S): Aventis Pasteur Limited, Toronto, CANADA
(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|--|---|------|--------------|
| PATENT INFORMATION: | US 6440701 | B1 | 20020827 |
| APPLICATION INFO.: | US 1998-59584 | | 19980414 (9) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. WO 1997-CA163, filed on 7 Mar 1997 Continuation-in-part of Ser. No. US 1997-778570, filed on 3 Jan 1997 Continuation-in-part of Ser. No. US 1996-613009, filed on 8 Mar 1996 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Pak, Michael | | |
| LEGAL REPRESENTATIVE: | Sim & McBurney | | |
| NUMBER OF CLAIMS: | 13 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 172 Drawing Figure(s); 172 Drawing Page(s) | | |
| LINE COUNT: | 5170 | | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | | |

AB Purified and isolated nucleic acid molecules are provided which encode transferrin receptor proteins of *Moraxella*, such as *M. catarrhalis* or a fragment or an analog of the transferrin receptor protein. The nucleic acid sequence may be used to produce recombinant transferrin receptor proteins Tbp1 and Tbp2 of the strain of *Moraxella* free of other proteins of the *Moraxella* strain

Searcher : Shears 308-4994

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for purposes of diagnostics and medical treatment. Furthermore, the nucleic acid molecule may be used in the diagnosis of infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.300
INCLS: 435/069.100; 435/069.300; 435/069.700; 435/071.100;
435/071.200; 435/252.100; 435/252.300; 435/325.000;
536/023.100; 536/023.400; 536/023.700
NCL NCLM: 435/069.300
NCLS: 435/069.100; 435/069.300; 435/069.700; 435/071.100;
435/071.200; 435/252.100; 435/252.300; 435/325.000;
536/023.100; 536/023.400; 536/023.700

L7 ANSWER 2 OF 22 USPATFULL

ACCESSION NUMBER: 2002:216836 USPATFULL
TITLE: High molecular weight major outer membrane
protein of moraxella
INVENTOR(S): Sasaki, Ken, Willowdale, CANADA
Harkness, Robin E., Willowdale, CANADA
Loosmore, Sheena M., Aurora, CANADA
Klein, Michel H., Willowdale, CANADA
PATENT ASSIGNEE(S): Aventis Pasteur Limited, Toronto, CANADA
(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 6440424 | B1 | 20020827 |
| APPLICATION INFO.: | US 1995-483855 | | 19950607 (8) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1995-431718, filed on 1 May 1995, now patented, Pat. No. US 6335018 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Minnifield, Nita | | |
| LEGAL REPRESENTATIVE: | Sim & McBurney | | |
| NUMBER OF CLAIMS: | 13 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 18 Drawing Figure(s); 17 Drawing Page(s) | | |
| LINE COUNT: | 1408 | | |

AB An isolated and purified outer membrane protein of a Moraxella strain, particularly M. catarrhalis, has a molecular mass of about 200 kDa. The about 200 kDa outer membrane protein as well as nucleic acid molecules encoding the same are useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a bacterial pathogen that produces the about 200 kDa outer membrane protein or produces a protein capable of inducing antibodies in a host specifically reactive with the about 200 kDa outer membrane protein.

INCL INCLM: 424/251.100
INCLS: 530/350.000; 530/412.000; 530/413.000; 530/414.000;
530/415.000; 424/190.100; 424/184.100; 424/234.100;
424/251.100; 514/002.000; 514/008.000; 930/200.000
NCL NCLM: 424/251.100
NCLS: 530/350.000; 530/412.000; 530/413.000; 530/414.000;
530/415.000; 424/190.100; 424/184.100; 424/234.100;

Searcher : Shears 308-4994

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424/251.100; 514/002.000; 514/008.000; 930/200.000

L7 ANSWER 3 OF 22 USPATFULL

ACCESSION NUMBER: 2002:133221 USPATFULL
TITLE: HIGH MOLECULAR WEIGHT MAJOR OUTER MEMBRANE
PROTEIN OF MORAXELLA
INVENTOR(S): SASAKI, KEN, WILLOWDALE, CANADA
HARKNESS, ROBIN E., WILLOWDALE, CANADA
LOOSMORE, SHEENA M., AURORA, CANADA
CHONG, PELE, RICHMOND HILL, CANADA
KLEIN, MICHEL H., WILLOWDALE, CANADA

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 2002068070 | A1 | 20020606 |
| | US 6440425 | B2 | 20020827 |
| APPLICATION INFO.: | US 1996-621944 | A1 | 19960326 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | SIM AND MCBURNEY, SUITE 701, 330 UNIVERSITY AVENUE, TORONTO, M5G1R7 | | |
| NUMBER OF CLAIMS: | 37 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 25 Drawing Page(s) | | |
| LINE COUNT: | 1685 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified outer membrane protein of a Moraxella strain, particularly M. catarrhalis, having a molecular mass of about 200 kDa, is provided. The about 200 kDa outer membrane protein as well as nucleic acid molecules encoding the same are useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a bacterial pathogen that produces the about 200 kDa outer membrane protein or produces a protein capable of inducing antibodies in a host specifically reactive with the about 200 kDa outer membrane protein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 530/350.000
NCL NCLM: 424/251.100
NCLS: 424/184.100; 424/185.100; 424/190.100; 424/234.100;
424/803.000; 530/300.000; 530/324.000; 530/325.000;
530/326.000

L7 ANSWER 4 OF 22 USPATFULL

ACCESSION NUMBER: 2002:115794 USPATFULL
TITLE: Multi-component vaccine to protect against
disease caused by Haemophilus influenzae and
Moraxella catarrhalis
INVENTOR(S): Loosmore, Sheena M., Aurora, CANADA
Yang, Yan-Ping, Willowdale, CANADA
Klein, Michel H., Willowdale, CANADA
Sasaki, Ken, Willowdale, CANADA
PATENT ASSIGNEE(S): Aventis Pasteur Limited, Toronto, CANADA
(non-U.S. corporation)

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

Searcher : Shears 308-4994

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PATENT INFORMATION: US 6391313 B1 20020521
APPLICATION INFO.: US 1999-353617 19990715 (9)
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Graser, Jennifer E.
LEGAL REPRESENTATIVE: Sim & McBurney
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 28 Drawing Figure(s); 18 Drawing Page(s)
LINE COUNT: 1437

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A multi-valent immunogenic composition confers protection on an immunized host against infection caused by both Haemophilus influenzae and Moraxella catarrhalis. Such composition comprises at least four antigens comprising at least one antigen from Haemophilus influenzae, and at least one antigen from Moraxella catarrhalis. Three of the antigens are adhesins. High molecular weight (HMW) proteins and Haemophilus influenzae adhesin (Hia) proteins of non-typeable Haemophilus and a 200 kDa outer membrane protein of Moraxella catarrhalis comprise the adhesin components while the other antigen is a non-proteolytic analog of Hin47 protein. Each component does not impair the immunogenicity of the others. The multi-valent immunogenic composition may be combined with DTP component vaccines, which may also include non-virulent poliovirus and PRP-T, to provide a component vaccine without impairment of the immunogenic properties of the other antigens.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/203.100
INCLS: 424/256.100; 424/251.100; 424/234.100; 424/193.100;
424/203.100; 424/197.110; 530/350.000
NCL NCLM: 424/203.100
NCLS: 424/193.100; 424/197.110; 424/234.100; 424/251.100;
424/256.100; 530/350.000

L7 ANSWER 5 OF 22 USPATFULL

ACCESSION NUMBER: 2002:931 USPATFULL
TITLE: High molecular weight major outer membrane protein of moraxella
INVENTOR(S): Sasaki, Ken, Willowdale, CANADA
Harkness, Robin E., Willowdale, CANADA
Klein, Michel H., Willowdale, CANADA
PATENT ASSIGNEE(S): Aventis Pasteur Limited, Toronto, CANADA
(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| ----- | | | |
| PATENT INFORMATION: | US 6335018 | B1 | 20020101 |
| APPLICATION INFO.: | US 1995-431718 | | 19950501 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Minnifield, Nita | | |
| LEGAL REPRESENTATIVE: | Sim & McBurney | | |
| NUMBER OF CLAIMS: | 9 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 5 Drawing Figure(s); 17 Drawing Page(s) | | |
| LINE COUNT: | 1398 | | |

Searcher : Shears 308-4994

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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified outer membrane protein of a Moraxella strain, particularly M. catarrhalis, has a molecular mass of about 200 kDa. The about 200 kDa outer membrane protein as well as nucleic acid molecules encoding the same are useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a bacterial pathogen that produces the about 200 kDa outer membrane protein or produces a protein capable of inducing antibodies in a host specifically reactive with the about 200 kDa outer membrane protein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 424/190.100; 424/251.100; 424/235.100; 424/184.100;
435/172.300; 530/300.000; 530/806.000; 530/825.000;
530/350.000; 536/023.500
NCL NCLM: 424/251.100
NCLS: 424/184.100; 424/190.100; 424/235.100; 435/471.000;
530/300.000; 530/350.000; 530/806.000; 530/825.000;
536/023.500

L7 ANSWER 6 OF 22 USPATFULL

ACCESSION NUMBER: 2001:157808 USPATFULL
TITLE: Transferrin receptor protein of Moraxella
INVENTOR(S): Yang, Yan-Ping, Willowdale, Canada
Myers, Lisa E., Guelph, Canada
Harkness, Robin E., Willowdale, Canada
Klein, Michel H., Willowdale, Canada
PATENT ASSIGNEE(S): Aventis Pasteur Limited, Toronto, Canada
(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 6290970 | B1 | 20010918 |
| APPLICATION INFO.: | US 1995-540753 | | 19951011 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Minnifield, Nita | | |
| LEGAL REPRESENTATIVE: | Sim & McBurney | | |
| NUMBER OF CLAIMS: | 7 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 12 Drawing Figure(s); 8 Drawing Page(s) | | |
| LINE COUNT: | 1199 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified non-denatured transferrin receptor protein of a Moraxella strain, particularly M. catarrhalis, has an apparent molecular mass of about 80 to about 90 kDa, as determined by SDS-PAGE. The transferrin receptor protein or a fragment analog thereof is useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a strain of Moraxella.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 530/350.000; 530/412.000; 424/190.100; 424/250.100;
424/184.100; 424/234.100; 514/002.000
NCL NCLM: 424/251.100

Searcher : Shears 308-4994

09/701711

NCLS: 424/184.100; 424/190.100; 424/234.100; 424/250.100;
514/002.000; 530/350.000; 530/412.000

L7 ANSWER 7 OF 22 USPATFULL

ACCESSION NUMBER: 2001:134223 USPATFULL
TITLE: HIGH MOLECULAR WEIGHT MAJOR OUTER MEMBRANE
PROTEIN OF MORAXELLA
INVENTOR(S): SASAKI, KEN, WILLOWDALE, Canada
HARKNESS, ROBIN E., WILLOWDALE, Canada
LOOSMORE, SHEENA M., AURORA, Canada
CHONG, PELE, RICHMOND HILL, Canada
KLEIN, MICHEL H., WILLOWDALE, Canada

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|----------------------|
| PATENT INFORMATION: | US 2001014672 | A1 | 20010816 |
| APPLICATION INFO.: | US 1998-945567 | A1 | 19980319 (8) |
| | WO 1996-CA264 | | 19960429 |
| | | | None PCT 102(e) date |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | US 1995-8431718 | 19950501 |
| | US 1995-8478370 | 19950607 |
| | US 1996-8621944 | 19960320 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | SIM & MCBURNEY, 6TH FLOOR, 330 UNIVERSITY AVENUE, TORONTO ONTARIO | |
| NUMBER OF CLAIMS: | 37 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 47 Drawing Page(s) | |
| LINE COUNT: | 1689 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified outer membrane protein of a Moraxella strain, particularly M. catarrhalis, having a molecular mass of about 200 kDa, is provided. The about 200 kDa outer membrane protein as well as nucleic acid molecules encoding the same are useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a bacterial pathogen that produces the about 200 kDa outer membrane protein or produces a protein capable of inducing antibodies in a host specifically reactive with the about 200 kDa outer membrane protein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 514/100.000
INCLS: 530/350.000
NCL NCLM: 514/100.000
NCLS: 530/350.000

L7 ANSWER 8 OF 22 USPATFULL

ACCESSION NUMBER: 2001:25435 USPATFULL
TITLE: Transferrin receptor protein of moraxella
INVENTOR(S): Yang, Yan-Ping, Willowdale, Canada
Myers, Lisa E., Guelph, Canada
Harkness, Robin E., Willowdale, Canada
Klein, Michel H., Willowdale, Canada

Searcher : Shears 308-4994

09/701711

PATENT ASSIGNEE(S): Connaught Laboratories Limited, Toronto, Canada
(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------------------|
| PATENT INFORMATION: | US 6190668 | B1 | 20010220 |
| | WO 9713785 | | 19970417 |
| APPLICATION INFO.: | US 1998-51320 | | 19980730 (9) |
| | WO 1996-CA684 | | 19961011 |
| | | | 19980730 PCT 371 date |
| | | | 19980730 PCT 102(e) date |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1995-540753, filed on 11 Oct 1995 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Minnifield, Nita | | |
| LEGAL REPRESENTATIVE: | Sim & McBurney | | |
| NUMBER OF CLAIMS: | 8 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 5 Drawing Figure(s); 8 Drawing Page(s) | | |
| LINE COUNT: | 1221 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified non-denatured transferrin receptor protein of a Moraxella strain, particularly M. catarrhalis, has an apparent molecular mass of about 80 to about 90 kDa, as determined by SDS-PAGE. The transferrin receptor protein or a fragment analog thereof is useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a strain of Moraxella. The transferrin receptor protein is isolated from strains of Moraxella catarrhalis by a procedure including extraction of agent soluble proteins of a cell mass produced by cultivating the strain under iron-starved conditions. The transferrin receptor protein is selectively solubilized from the extracted cell mass and purified.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 530/387.100; 530/412.000; 530/417.000; 435/007.100;
435/007.800; 435/070.200
NCL NCLM: 424/251.100
NCLS: 435/007.100; 435/007.800; 435/070.200; 530/387.100;
530/412.000; 530/417.000

L7 ANSWER 9 OF 22 USPATFULL

ACCESSION NUMBER: 2001:18617 USPATFULL
TITLE: Lactoferrin receptor genes of Moraxella
INVENTOR(S): Loosmore, Sheena M., Aurora, Canada
Du, Run-Pan, Thornhill, Canada
Wang, Quijun, Thornhill, Canada
Yang, Yan-Ping, Willowdale, Canada
Klein, Michel H., Willowdale, Canada
PATENT ASSIGNEE(S): Connaught Laboratories Limited, Toronto, Canada
(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|---------------|------|--------------|
| PATENT INFORMATION: | US 6184371 | B1 | 20010206 |
| APPLICATION INFO.: | US 1998-74658 | | 19980508 (9) |

Searcher : Shears 308-4994

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RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1997-867941,
filed on 3 Jun 1997, now patented, Pat. No. US
5977337
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Graser, Jennifer
LEGAL REPRESENTATIVE: Sim & McBurney
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 140 Drawing Figure(s); 130 Drawing Page(s)
LINE COUNT: 1824

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Purified and isolated nucleic acid molecules are provided which
encode lactoferrin receptor proteins of Moraxella, such as M.
catarrhalis, or a fragment or an analog of the lactoferrin
receptor protein. The nucleic acid sequence may be used to produce
recombinant lactoferrin receptor proteins Lbp1, Lbp2 and ORF3 of
the strain of Moraxella free of other proteins of the Moraxella
strain for purposes of diagnostics and medical treatment.
Furthermore, the nucleic acid molecule may be used in the
diagnosis of infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 536/023.700
INCLS: 536/023.100; 536/024.300; 536/024.320; 435/320.100;
435/069.100; 435/069.300; 435/069.700; 435/252.300;
424/200.100; 424/251.100
NCL NCLM: 536/023.700
NCLS: 424/200.100; 424/251.100; 435/069.100; 435/069.300;
435/069.700; 435/252.300; 435/320.100; 536/023.100;
536/024.300; 536/024.320

L7 ANSWER 10 OF 22 USPATFULL

ACCESSION NUMBER: 1999:166603 USPATFULL
TITLE: Outer membrane protein B1 of Moraxella
catarrhalis
INVENTOR(S): Campagnari, Anthony A., Hamburg, NY, United
States
PATENT ASSIGNEE(S): The Research Foundation of the State University
of New York, Amherst, NY, United States (U.S.
corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 6004562 | | 19991221 |
| APPLICATION INFO.: | US 1996-698652 | | 19960816 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Housel, James C. | | |
| ASSISTANT EXAMINER: | Ryan, V. | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews, Woods & Goodyear, LLP | | |
| NUMBER OF CLAIMS: | 10 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 915 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified outer membrane protein B1, and peptides
formed therefrom, of Moraxella catarrhalis are described. A method

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for the isolation and purification of outer membrane protein B1 from a bacterial strain that produces B1 protein, e.g. *Moraxella catarrhalis*, comprises growing the bacteria in culture in iron-depleted medium to enhance the expression of the B1 protein, harvesting the bacteria from the culture, extracting from the harvested bacteria a preparation substantially comprising an outer membrane protein preparation, contacting the outer membrane preparation with an affinity matrix containing immobilized transferrin wherein B1 protein binds to the transferrin, and eluting the bound B1 protein from the transferrin. Disclosed are the uses of the B1 protein as an immunogen for vaccine formulations, and as antigens in diagnostic immunoassays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 424/184.100; 424/234.100
NCL NCLM: 424/251.100
NCLS: 424/184.100; 424/234.100

L7 ANSWER 11 OF 22 USPATFULL

ACCESSION NUMBER: 1999:155210 USPATFULL
TITLE: Methods and compositions relating to useful
antigens of *moraxella catarrhalis*
INVENTOR(S): Hansen, Eric J., Plano, TX, United States
Helminen, Meria E., Helsinki, Finland
Maciver, Isobel, Dallas, TX, United States
PATENT ASSIGNEE(S): Board of Regents, The University of Texas,
Austin, TX, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5993826 | | 19991130 |
| APPLICATION INFO.: | US 1993-25363 | | 19930302 (8) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. WO 1992-US6869, filed on 14 Aug 1992 which is a continuation-in-part of Ser. No. US 1991-745591, filed on 21 Aug 1991, now patented, Pat. No. US 5552146 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Sidberry, Hazel F. | | |
| LEGAL REPRESENTATIVE: | Arnold White & Durkee | | |
| NUMBER OF CLAIMS: | 11 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 19 Drawing Figure(s); 17 Drawing Page(s) | | |
| LINE COUNT: | 3037 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present disclosure relates to *Moraxella catarrhalis* outer membrane vesicle (OMV) compositions, to selected antigenic proteins from the outer membranes of *M. catarrhalis* which have a variety of useful properties, and to monoclonal antibodies against these proteins. Particular "Outer Membrane Proteins" (OMPs) of the invention are characterized as having molecular weights of about 30 kD, 80 kD (also termed CopB protein) and between about 200 and 700 kD (HMWP antigen). Passive immunization with monoclonal antibodies directed against these proteins confers protection against homologous and heterologous *Moraxella catarrhalis* strains in animal models, and active immunization with outer membrane

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vesicles also enhances pulmonary clearance of distinct M. catarrhalis strains. This demonstrates both the utility of antibodies in conferring passive immunity and the usefulness of OMPs, or variants thereof, in the preparation of vaccines. Also disclosed are DNA segments encoding these OMPs, methods for preparing the antigens, or variants, through the application of recombinant DNA techniques, as well as diagnostic methods and related embodiments.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 424/184.100; 530/350.000; 530/388.100; 530/388.200;
435/069.100; 435/069.300
NCL NCLM: 424/251.100
NCLS: 424/184.100; 435/069.100; 435/069.300; 530/350.000;
530/388.100; 530/388.200

L7 ANSWER 12 OF 22 USPATFULL

ACCESSION NUMBER: 1999:141620 USPATFULL

TITLE: Methods and compositions relating to useful antigens of moraxella catarrhalis

INVENTOR(S): Hansen, Eric J., Plano, TX, United States
Helminen, Merja E., Helsinki, Finland

PATENT ASSIGNEE(S): Maciver, Isobel, Dallas, TX, United States
Board of Regents, The University of Texas System,
Austin, TX, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5981213 | | 19991109 |
| APPLICATION INFO.: | US 1995-450351 | | 19950525 (8) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1993-25363, filed on 2 Mar 1993 which is a continuation-in-part of Ser. No. WO 1992-US6869, filed on 14 Aug 1992, now patented, Pat. No. WO 819315, issued on 19 Sep 1994 which is a continuation-in-part of Ser. No. US 1991-745591, filed on 21 Aug 1991, now patented, Pat. No. US 5552146 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Housel, James C. | | |
| ASSISTANT EXAMINER: | Shaver, Jennifer | | |
| LEGAL REPRESENTATIVE: | Arnold, White & Durkee | | |
| NUMBER OF CLAIMS: | 23 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 13 Drawing Figure(s); 17 Drawing Page(s) | | |
| LINE COUNT: | 3099 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present disclosure relates to Moraxella catarrhalis outer membrane vesicle (OMV) compositions, to selected antigenic proteins from the outer membranes of M. catarrhalis which have a variety of useful properties, and to monoclonal antibodies against these proteins. Particular "Outer Membrane Proteins" (OMPs) of the invention are characterized as having molecular weights of about 30 kD, 80 kD (also termed CopB protein) and between about 200 and 700 kD (HMWP antigen). Passive immunization with monoclonal antibodies directed against these proteins confers protection against homologous and heterologous Moraxella catarrhalis strains

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in animal models, and active immunization with outer membrane vesicles also enhances pulmonary clearance of distinct M. catarrhalis strains. This demonstrates both the utility of antibodies in conferring passive immunity and the usefulness of OMPs, or variants thereof, in the preparation of vaccines. Also disclosed are DNA segments encoding these OMPs, methods for preparing the antigens, or variants, through the application of recombinant DNA techniques, as well as diagnostic methods and related embodiments.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.100
INCLS: 435/069.300; 435/252.200; 435/320.100; 536/023.100;
536/023.700; 536/024.320; 424/234.100; 424/251.100
NCL NCLM: 435/069.100
NCLS: 424/234.100; 424/251.100; 435/069.300; 435/252.200;
435/320.100; 536/023.100; 536/023.700; 536/024.320

L7 ANSWER 13 OF 22 USPATFULL

ACCESSION NUMBER: 1999:132546 USPATFULL

TITLE: Gene encoding outer membrane protein B1 of moraxella catarrhalis

INVENTOR(S): Murphy, Timothy F., Amherst, NY, United States
Sethi, Sanjay, Williamsville, NY, United States

PATENT ASSIGNEE(S): The Research Foundation of State University of
New York, Amherst, NY, United States (U.S.
corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5972657 | | 19991026 |
| APPLICATION INFO.: | US 1997-949941 | | 19971014 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Caputa, Anthony C. | | |
| ASSISTANT EXAMINER: | Navarro, Mark | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews, Woods & Goodyear, LLP | | |
| NUMBER OF CLAIMS: | 18 | | |
| EXEMPLARY CLAIM: | 1 | | |
| LINE COUNT: | 1308 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Nucleotide sequences, derived from Moraxella catarrhalis, which encode one or more epitopes of outer membrane protein B1 are disclosed. Recombinant B1 protein or B1 peptides may be produce by culturing in a medium a host cell genetically engineered to contain and express a nucleotide sequence according to the present invention, and recovering the recombinant protein or peptide from the cultured host cell or culture medium. The nucleotide sequence of the present invention can also be used in molecular diagnostic assays for detecting M. catarrhalis genetic material, and in antigenic compositions for producing B1-specific amino acids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.300
INCLS: 435/071.100; 435/320.100; 435/325.000; 536/023.700
NCL NCLM: 435/069.300
NCLS: 435/071.100; 435/320.100; 435/325.000; 536/023.700

Searcher : Shears 308-4994

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L7 ANSWER 14 OF 22 USPATFULL

ACCESSION NUMBER: 1999:106092 USPATFULL
TITLE: Vaccine for Moraxella catarrhalis
INVENTOR(S): Murphy, Timothy F., East Amherst, NY, United States
PATENT ASSIGNEE(S): The Research Foundation of State University of New York, Amherst, NY, United States (U.S. corporation).

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5948412 | | 19990907 |
| APPLICATION INFO.: | US 1997-810655 | | 19970303 (8) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1994-245758, filed on 17 May 1994, now patented, Pat. No. US 5607846 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Degen, Nancy | | |
| ASSISTANT EXAMINER: | Schwartzman, Robert | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews Woods & Goodyear, LLP | | |
| NUMBER OF CLAIMS: | 17 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 1552 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions comprising outer membrane protein "E", and peptides and oligopeptides thereof, of Moraxella catarrhalis are described. Additionally, nucleotide sequences encoding the protein, peptide, or oligopeptide are disclosed, as well as recombinant vectors containing these sequences. Protein, peptide, or oligopeptide can be produced from host cell systems containing these recombinant vectors. Peptides and oligopeptides can also be chemically synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens in antigenic formulations for vaccine applications or for generating antisera of diagnostic or therapeutic use; and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertions into attenuated bacteria in constructing a recombinant bacterial vaccine and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding E as primers and/or probes in molecular diagnostic assays for the detection of M. catarrhalis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100
INCLS: 530/350.000
NCL NCLM: 424/251.100
NCLS: 530/350.000

L7 ANSWER 15 OF 22 USPATFULL

ACCESSION NUMBER: 1998:112095 USPATFULL
TITLE: Nucleic acids encoding high molecular weight major outer membrane protein of moraxella
INVENTOR(S): Sasaki, Ken, 1131 Steeles Avenue, West, Apt. No. 512, Willowdale, Ontario, Canada M2R 3W8
Harkness, Robin E., 640 Sheppard Avenue, East,

Searcher : Shears 308-4994

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Apt. #1706, Willowdale, Ontario, Canada M2K 1B8
Loosmore, Sheena M., 70 Crawford Rose Drive,
Aurora, Ontario, Canada L4G 4R4
Klein, Michel H., 16 Munro Boulevard, Willowdale,
Ontario, Canada M2P 1B9

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5808024 | | 19980915 |
| APPLICATION INFO.: | US 1995-478370 | | 19950607 (8) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1995-431718, filed on 1 May 1995 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Walsh, Stephen | | |
| ASSISTANT EXAMINER: | Sorensen, Kenneth A. | | |
| NUMBER OF CLAIMS: | 13 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 18 Drawing Figure(s); 17 Drawing Page(s) | | |
| LINE COUNT: | 1481 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated and purified outer membrane protein of a Moraxella strain, particularly M. catarrhalis, has a molecular mass of about 200 kDa. The about 200 kDa outer membrane protein as well as nucleic acid molecules encoding the same are useful in diagnostic applications and immunogenic compositions, particularly for in vivo administration to a host to confer protection against disease caused by a bacterial pathogen that produces the about 200 kDa outer membrane protein or produces a protein capable of inducing antibodies in a host specifically reactive with the about 200 kDa outer membrane protein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 536/023.100
INCLS: 435/069.100; 435/069.700; 435/252.300; 435/320.100;
435/325.000; 530/300.000; 530/350.000; 536/023.500;
424/251.100
NCL NCLM: 536/023.100
NCLS: 424/251.100; 435/069.100; 435/069.700; 435/252.300;
435/320.100; 435/325.000; 530/300.000; 530/350.000;
536/023.500

L7 ANSWER 16 OF 22 USPATFULL

ACCESSION NUMBER: 1998:61433 USPATFULL
TITLE: Methods and compositions relating to useful
antigens of moraxella catarrhalis
INVENTOR(S): Hansen, Eric J., Plano, TX, United States
Maciver, Isobel, Dallas, TX, United States
Helminen, Merja, Helsinki, Finland
PATENT ASSIGNEE(S): Board of Regents, The University of Texas System,
United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5759813 | | 19980602 |
| APPLICATION INFO.: | US 1994-193150 | | 19940919 (8) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1991-745591, filed on 15 Aug 1991, now patented, Pat. No. US 5552146 | | |

Searcher : Shears 308-4994

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DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Hutzell, Paula K.
ASSISTANT EXAMINER: Navarro, Mark
LEGAL REPRESENTATIVE: Arnold, White & Durkee
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1732

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present disclosure relates to selected antigenic proteins obtained from the outer membranes of *Moraxella catarrhalis*, that are found to have a variety of useful properties. These proteins, termed OMPs ("Outer Membrane Proteins"), are characterized as having molecular weights of about 30 kD, 80 kD and between about 200 and 700 kD, respectively. Studies set forth herein demonstrated that monoclonal antibodies directed against these proteins confer a protective effect against infection by *Moraxella catarrhalis* organisms in animal models, demonstrating the potential usefulness of such antibodies in conferring passive immunity as well as the potential usefulness of these OMPs, or variants thereof, in the preparation of vaccines. Also disclosed are DNA segments encoding these OMPs, methods for preparing the antigens or variants, through the application of recombinant DNA techniques, as well as diagnostic methods and embodiments.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.300
INCLS: 435/069.100; 435/320.100; 435/325.000; 536/023.100;
536/023.700; 530/350.000; 424/184.100
NCL NCLM: 435/069.300
NCLS: 424/184.100; 435/069.100; 435/320.100; 435/325.000;
530/350.000; 536/023.100; 536/023.700

L7 ANSWER 17 OF 22 USPATFULL

ACCESSION NUMBER: 1998:24926 USPATFULL
TITLE: Vaccine for *branhameia catarrhalis*
INVENTOR(S): Murphy, Timothy F., East Amherst, NY, United States
PATENT ASSIGNEE(S): Research Foundation of State University of New York, Amherst, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5725862 | | 19980310 |
| APPLICATION INFO.: | US 1995-569959 | | 19951208 (8) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1994-306871, filed on 20 Sep 1994, now patented, Pat. No. US 5712118 which is a continuation-in-part of Ser. No. US 1993-129719, filed on 29 Sep 1993, now patented, Pat. No. US 5556755 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Minnifield, N. M. | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews Woods & Goodyear | | |
| NUMBER OF CLAIMS: | 16 | | |
| EXEMPLARY CLAIM: | 1 | | |

Searcher : Shears 308-4994

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NUMBER OF DRAWINGS: 6 Drawing Figure(s); 3 Drawing Page(s)

LINE COUNT: 1877

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions comprising outer membrane protein "CD", and peptides and oligopeptides thereof, of *Branhamella catarrhalis* are described. Additionally, nucleotide sequences encoding the protein, peptide or oligopeptide are disclosed, as well as recombinant vectors containing these sequences. Protein, peptide or oligopeptide can be produced from host cell systems containing these recombinant vectors. Peptides and oligopeptides can also be chemically synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens for vaccine formulations, and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertion into attenuated bacteria in constructing a recombinant bacterial vaccine, and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding CD as primers and/or probes in molecular diagnostic assays for the detection of *B. catarrhalis*.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100

INCLS: 424/184.100; 424/234.100; 424/185.100; 530/350.000;
530/300.000; 514/002.000; 435/320.100; 435/240.200;
435/252.300; 435/254.110; 435/069.100; 435/070.100;
435/071.100

NCL NCLM: 424/251.100

NCLS: 424/184.100; 424/185.100; 424/234.100; 435/069.100;
435/070.100; 435/071.100; 435/252.300; 435/254.110;
435/320.100; 514/002.000; 530/300.000; 530/350.000

L7 ANSWER 18 OF 22 USPATFULL

ACCESSION NUMBER: 1998:9349 USPATFULL

TITLE: Vaccine for *branhameella catarrhalis*

INVENTOR(S): Murphy, Timothy F., East Amherst, NY, United States

PATENT ASSIGNEE(S): Research Foundation of State University of New York, Amherst, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5712118 | | 19980127 |
| APPLICATION INFO.: | US 1994-306871 | | 19940920 (8) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1993-129719, filed on 29 Sep 1993, now patented, Pat. No. US 5556755, issued on 17 Sep 1996 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Hutzell, Paula K. | | |
| ASSISTANT EXAMINER: | Minnifield, N. M. | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews, Woods & Goodyear | | |
| NUMBER OF CLAIMS: | 9 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 6 Drawing Figure(s); 3 Drawing Page(s) | | |
| LINE COUNT: | 1838 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Searcher : Shears 308-4994

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AB Compositions comprising outer membrane protein "CD", and peptides and oligopeptides thereof, of *Branhamella catarrhalis* are described. Additionally, nucleotide sequences encoding the protein, peptide or oligopeptide are disclosed, as well as recombinant vectors containing these sequences. Protein, peptide or oligopeptide can be produced from host cell systems containing these recombinant vectors. Peptides and oligopeptides can also be chemically synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens for vaccine formulations, and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertion into attenuated bacteria in constructing a recombinant bacterial vaccine, and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding CD as primers and/or probes in molecular diagnostic assays for the detection of *B. catarrhalis*.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.300
INCLS: 435/320.100; 435/252.100; 435/087.100; 435/091.100;
435/091.400T; 435/235.100; 435/172.300; 536/022.100;
536/023.100; 530/350.000
NCL NCLM: 435/069.300
NCLS: 435/091.100; 435/091.400; 435/235.100; 435/252.100;
435/320.100; 530/350.000; 536/022.100; 536/023.100

L7 ANSWER 19 OF 22 USPATFULL

ACCESSION NUMBER: 97:18072 USPATFULL
TITLE: Vaccine for *moraxella catarrhalis*
INVENTOR(S): Murphy, Timothy F., East Amherst, NY, United States
Bhushan, Reva, North Potomac, MD, United States
PATENT ASSIGNEE(S): Research Foundation of State University of New York, Amherst, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5607846 | | 19970304 |
| APPLICATION INFO.: | US 1994-245758 | | 19940517 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Guzo, David | | |
| ASSISTANT EXAMINER: | Schwartzman, Robert | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews, Woods & Goodyear | | |
| NUMBER OF CLAIMS: | 8 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 1262 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions comprising outer membrane protein "E", and peptides and oligopeptides thereof, of *Moraxella catarrhalis* are described. Additionally, nucleotide sequences encoding the protein, peptide, or oligopeptide are disclosed, as well as recombinant vectors containing these sequences. Protein, peptide, or oligopeptide can be produced from host cell systems containing these recombinant vectors. Peptides and oligopeptides can also be chemically

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synthesized. Disclosed are the uses of the protein, peptides and oligopeptides as antigens for vaccine formulations, and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertions into attenuated bacteria in constructing a recombinant bacterial vaccine and for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding E as primers and/or probes in molecular diagnostic assays for the detection of *M. catarrhalis*.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.300
INCLS: 435/252.300; 435/252.800; 435/320.100; 536/023.100
NCL NCLM: 435/069.300
NCLS: 435/252.300; 435/252.800; 435/320.100; 536/023.100

L7 ANSWER 20 OF 22 USPATFULL

ACCESSION NUMBER: 97:9925 USPATFULL

TITLE: Methods and compositions relating to useful antigens of *Moraxella catarrhalis*

INVENTOR(S): Hansen, Eric J., Plano, TX, United States
Helminen, Merja, Dallas, TX, United States
Maciver, Isobel, Dallas, TX, United States

PATENT ASSIGNEE(S): American Cyanamid Company, Wayne, NJ, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 5599693 | | 19970204 |
| APPLICATION INFO.: | US 1995-450002 | | 19950525 (8) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1991-745591, filed on 15 Aug 1991 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Housel, James C. | | |
| ASSISTANT EXAMINER: | Murthy, Prasad | | |
| LEGAL REPRESENTATIVE: | Arnold White & Durkee | | |
| NUMBER OF CLAIMS: | 12 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 1620 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present disclosure relates to selected antigenic proteins obtained from the outer membranes of *Moraxella catarrhalis*, that have been found by the inventors to have a variety of useful properties. These proteins, termed OMPs ("Outer Membrane Proteins"), are characterized as having molecular weights of 30, 80 and 100 kD, respectively. Studies set forth herein demonstrate that monoclonal antibodies directed against these proteins confer a protective effect against infection by *Moraxella catarrhalis* organisms in animal models, demonstrating the potential usefulness of such antibodies in conferring passive immunity as well as the potential usefulness of these OMPs, or variants thereof, in the preparation of vaccines. Also disclosed are DNA segments encoding these OMPs, methods for preparing the antigens, or variants, through the application of recombinant DNA techniques, as well as diagnostic methods and embodiments.

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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/069.300
INCLS: 424/184.100; 424/251.100; 435/007.200; 435/007.320;
435/071.100; 435/071.200; 435/243.000; 435/252.100;
436/543.000; 530/388.200; 530/388.400; 530/412.000;
530/413.000; 935/106.000; 935/108.000; 935/109.000;
935/110.000
NCL NCLM: 435/069.300
NCLS: 424/184.100; 424/251.100; 435/007.200; 435/007.320;
435/071.100; 435/071.200; 435/243.000; 435/252.100;
436/543.000; 530/388.200; 530/388.400; 530/412.000;
530/413.000

L7 ANSWER 21 OF 22 USPATFULL

ACCESSION NUMBER: 96:85036 USPATFULL
TITLE: Method for detecting Branhamella catarrhalis
INVENTOR(S): Murphy, Timothy F., East Amherst, NY, United States
PATENT ASSIGNEE(S): The Research Foundation of State University of New York, Amherst, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5556755 | | 19960917 |
| APPLICATION INFO.: | US 1993-129719 | | 19930929 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Zitomer, Stephanie W. | | |
| ASSISTANT EXAMINER: | Sisson, Bradley L. | | |
| LEGAL REPRESENTATIVE: | Hodgson, Russ, Andrews, Woods & Goodyear | | |
| NUMBER OF CLAIMS: | 10 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 6 Drawing Figure(s); 3 Drawing Page(s) | | |
| LINE COUNT: | 1223 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions comprising outer membrane protein "CD", and peptides thereof, of Branhamella catarrhalis are described. Additionally, nucleotide sequences encoding the protein or peptide are disclosed, as well as recombinant vectors containing these sequences. Protein or peptide can be produced from host cell systems containing these recombinant vectors. Peptides can also be chemically synthesized. Disclosed are the uses of the protein and peptides as antigens for vaccine formulations, and as antigens in diagnostic immunoassays. The nucleotide sequences are useful for inserting into a viral vector in constructing a recombinant viral vaccine. Also described is the use of nucleotide sequences related to the gene encoding CD as primers and/or probes in molecular diagnostic assays for the detection of B. catarrhalis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/006.000
INCLS: 435/091.100; 435/091.200; 435/871.000; 536/023.700;
536/024.320; 536/024.330; 536/025.300; 935/077.000;
935/078.000
NCL NCLM: 435/006.000
NCLS: 435/091.100; 435/091.200; 435/871.000; 536/023.700;

Searcher : Shears 308-4994

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536/024.320; 536/024.330; 536/025.300

L7 ANSWER 22 OF 22 USPATFULL

ACCESSION NUMBER: 96:80017 USPATFULL

TITLE: Methods and compositions relating to useful antigens of *Moraxella catarrhalis*

INVENTOR(S): Hansen, Eric J., Plano, TX, United States
Helminen, Merja, Dallas, TX, United States
Maciver, Isobel, Dallas, TX, United States

PATENT ASSIGNEE(S): Board of Regents, The University of Texas System,
Austin, TX, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5552146 | | 19960903 |
| APPLICATION INFO.: | US 1991-745591 | | 19910815 (7) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Sidberry, Hazel F. | | |
| LEGAL REPRESENTATIVE: | Arnold, White & Durkee | | |
| NUMBER OF CLAIMS: | 7 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 1597 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present disclosure relates to selected antigenic proteins obtained from the outer membranes of *Moraxella catarrhalis*, that have been found by the inventors to have a variety of useful properties. These proteins, termed OMPs ("Outer Membrane Proteins"), are characterized as having molecular weights of 30, 80 and 100 kD, respectively. Studies set forth herein demonstrate that monoclonal antibodies directed against these proteins confer a protective effect against infection by *Moraxella catarrhalis* organisms in animal models, demonstrating the potential usefulness of such antibodies in conferring passive immunity as well as the potential usefulness of these OMPs, or variants thereof, in the preparation of vaccines. Also disclosed are DNA segments encoding these OMPs, methods for preparing the antigens, or variants, through the application of recombinant DNA techniques, as well as diagnostic methods and embodiments.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/251.100

INCLS: 424/184.100; 530/350.000

NCL NCLM: 424/251.100

NCLS: 424/184.100; 530/350.000

09/701711

(FILE ~~HCAPLUS~~, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
JICST-EPLUS, JAPIO, USPATFULL' ENTERED AT 11:08:53 ON 06 SEP 2002)

L11 0 S ("DE BASSOLS" ? OR "VINALS" ?)/AU AND L2
L12 4 S ("BASSOLS" ? OR "VINALS" ?)/AU AND L1
L13 2 DUP REM L12 (2 DUPLICATES REMOVED)

- Author

L13 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
ACCESSION NUMBER: 1999:795840 HCAPLUS
DOCUMENT NUMBER: 132:45830
TITLE: BASB031 polynucleotides and polypeptides from
Moraxella catarrhalis and
their use for diagnosis and treatment of
infection
INVENTOR(S): Ruelle, Jean-louis; Tommassen, Johannes Petrus
Maria; **Vinals-Bassols, Carlota**
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S. A., Belg.
SOURCE: PCT Int. Appl., 113 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|----------|-----------------|----------|
| WO 9964448 | A2 | 19991216 | WO 1999-EP3823 | 19990531 |
| WO 9964448 | A3 | 20000203 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| AU 9945049 | A1 | 19991230 | AU 1999-45049 | 19990531 |
| EP 1082436 | A2 | 20010314 | EP 1999-927845 | 19990531 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | |

PRIORITY APPLN. INFO.: GB 1998-12163 A 19980605
WO 1999-EP3823 W 19990531

AB The invention provides BASB031 polypeptides and polynucleotides encoding BASB031 polypeptides and methods for producing such polypeptides by recombinant techniques. The BASB031 genomic DNA was prepd. from **Moraxella catarrhalis** (also named **Branhella catarrhalis**) and shown to encode a polypeptide 473 amino acids in length with homol. to *Pseudomonas aeruginosa* PilQ fimbrial assembly protein. BASB031 sequence variability was detected between **M. catarrhalis** strains ATCC 43617, Mc2911 and Mc2969. Also provided are diagnostic, prophylactic and therapeutic uses in **M. catarrhalis** infections causing otitis media, pneumonia, and sinusitis.

L13 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
ACCESSION NUMBER: 1999:784268 HCAPLUS
DOCUMENT NUMBER: 132:31787

Searcher : Shears 308-4994

09/701711

TITLE: Sequences of a novel **Moraxella catarrhalis** protein, designated BASB027, and uses thereof in diagnostic assays and in vaccines

INVENTOR(S): **Vinals-Bassols, Carlota**

PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.

SOURCE: PCT Int. Appl., 109 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|------------|
| WO 9963093 | A2 | 19991209 | WO 1999-EP3822 | 19990531 |
| WO 9963093 | A3 | 20000302 | | |
| W: | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| AU 9943732 | A1 | 19991220 | AU 1999-43732 | 19990531 |
| AU 738896 | B2 | 20010927 | | |
| BR 9911609 | A | 20010206 | BR 1999-11609 | 19990531 |
| EP 1082435 | A2 | 20010314 | EP 1999-926507 | 19990531 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI | | | |
| JP 2002517199 | T2 | 20020618 | JP 2000-552287 | 19990531 |
| NO 2000006112 | A | 20010202 | NO 2000-6112 | 20001201 |
| PRIORITY APPLN. INFO.: | | | GB 1998-11945 | A 19980603 |
| | | | GB 1999-5304 | A 19990308 |
| | | | WO 1999-EP3822 | W 19990531 |

AB This invention provides protein and DNA sequences for a novel **Moraxella catarrhalis** (strain ATCC 43617) protein, designated BASB027, which shows 32% amino acid sequence identity to the OMP85 outer membrane protein of *Neisseria meningitidis*. The invention also relates to the use of BASB027 protein, gene, or fragments thereof, in vaccines against *Moraxella* infection and in diagnostic assays.

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